JULY 1962
40 CENTS

CB HORIZONS

NOW-GRS News from Canada!

CITIZENS BAND - GENERAL RADIO SERVICE - COMMUNICACIONES PERSONALES

IN THIS ISSUE—

Cover Story—Hidden Transmitter Hunt For CB Radio

Customize Your HE-20 • Trouble Shooting Transmitter Repairs • Build Your Own RF Power Meter • CB Bow-Tie Antenna • CB In South America • CB At World's Fair

INTERNATIONAL'S Executive

citizens band

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Crystal filter for minimizing adjacent channel interference. Built-in calibration circuit • 12 position crystal controlled transmit channel selector • Front panel microphone jack • Provision for connecting external speaker and S/meter • Tunable dual conversion superheterodyne receiver covering all 23 channel • Two crystal controlled receive positions • Push-to-talk operation • Three way power supply for 6/12 vdc and 115 vac • Five watts plate input • Certified tolerance ±.005% • Brown cabinet with brown and silver panel • Dimensions: 5½" H. x 8½" W. x 9" D.

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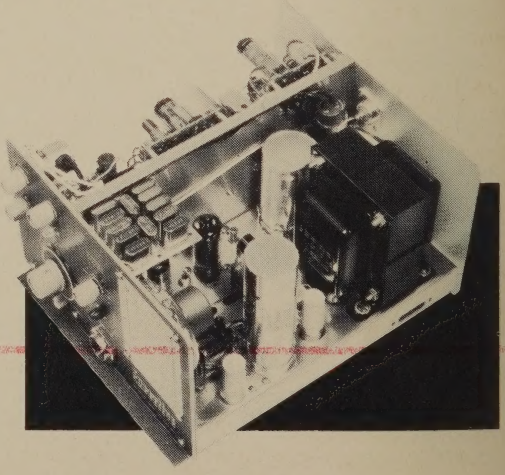

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Model 100 B
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The International Model 100 Executive is designed for top performance and dependability. Here is a transceiver to fill the requirements of the most demanding Citizens licensee. Twelve crystal controlled transmit channels, a tunable dual conversion superheterodyne receiver covering all 23 channels, plus two crystal controlled receive positions are only a few of the outstanding features of the Model 100. Highest quality components and rugged construction add up to years of trouble free operation.

transceiver model 100

EXECUTIVE ACCESSORIES . . .

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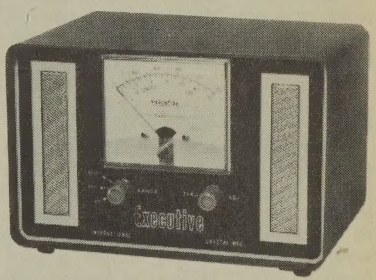

The perfect companion unit for the Model 100 Executive. High impedance vacuum tube volt meter circuit. Connects to socket on rear of transceiver. S/meter reads in three ranges.

Complete with interconnecting cable.....$49.50

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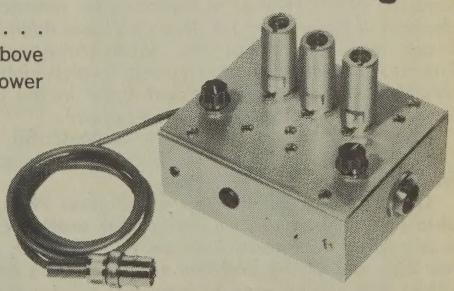


A microphone amplifier designed to increase modulation . . . limits modulation peaks . . . filter audio frequencies above 2500 cycles. Permits arms-length microphone operation. Power requirements: 12 vac or 12 vdc.

Complete with interconnecting cable.....$36.50

12.6 VAC, 2 Ampere Power Unit

Base station power unit for Speech Clipper/Amplifier. Operates from 115 vac. Provides 12.6 vac at 2 amperes.

Complete with power cord, fuse and switch.....$12.50

INTERNATIONAL CRYSTAL MFG. CO., INC.

18 NORTH LEE • OKLAHOMA CITY, OKLAHOMA

OZZIE'S MAIL-BOX

Sir:

Attached is my check for $10 which I hope will cover airmail of CBH to Japan. As a Technical Consultant to several Japanese manufacturers who are struggling to build CB equipment for the U.S. market, possession of copies of CBH will give me plenty of ammunition to shoot down the 'feather merchants' who hope to make the transistorized handie-talkie into another "six transistor" rat-race item! With your conscientiously assembled publication I will be able to show the Japanese manufacturers that CB'ers are real people, that they are worried about TVI, QRM from mis-handled sets, sloppy techniques and all sorts of problems. Too many of the Americans in Japan to buy gear have stressed price and now the Japanese think CB radios are toys. Your magazine will help me convince them otherwise!

Leonard E. Geisler, AES
Tokyo, Japan

Ozzie:

First, let me say that CB Horizons fills a much needed place in the CB world. I'd be lost without its up-to-date articles. I spend 11 of the 12 months on the road and am not able to belong to a club. CBH keeps me up to date in a fine way! I do have one major gripe. I am all in favor of NATCH-9 as a nation-wide monitoring channel. I have it on my license plates even. But I am real sore about the South American or Puerto Rican station on channel 9 which clobbers this channel all along the east coast in the daytime. How do we get rid of this fellow?

H. L. Metcalfe
Braintree, Mass.

H. L.:

Ozzie's spies tell him an outfit near Philadelphia has a huge antenna array for scatter communications to Puerto Rico on this channel, and the P.R. end of the line has an equally big array. While this set-up may or may not be sanctioned by the FCC, it would seem that common courtesy would move the circuit to another channel. I am sure we give it as much trouble as it gives us.

Ozzie

Ozzie,

You recently discussed the Raytheon and Ford get together which is going over so well. As a Raytheon Distributor, I think this is a great thing. I have contacted all of the local Ford Dealers and have sold several on allowing me to do their installation work. I have even gone to Chevrolet and sold them on pushing CB radio the same as Ford, on a local basis. Everyone seems happy and I have more business than I can handle!

Jack Frankford
Michigan Mobile Radio
Detroit, Michigan

Jack:

Enterprising sort, aren't you! Other CB dealers would do well to follow your footsteps and line up some extra business too. In this way we will be able to properly instruct both Ford's dealers and customers on what CB radio is, and of greater importance, what it isn't!

Ozzie

Ozzie:

I would just like to say a few things about your magazine. When I first saw your magazine I thought this was going to be a good magazine for CB'ers. But who wants to read a magazine full of advertisements? Can you cure this?

Leon A. Toole
20Q5100

Leon:

Sure thing! It's simple to cure; just stop accepting advertising. Of course, this would raise your subscription cost to $11.50 a year—and since it would cost the equipment manufacturers something like 12 times as much to tell you about their product by direct mail, you'd probably also have to shell out considerably more for your next rig! But if enough of you want it this way, we can do it. It's up to you all—the CB'ers of America. What do the rest of you think?

Ozzie

Oz:

Is it true some states are issuing special license plates for CB radio operators? I see where Wisconsin is one of the states reportedly doing so. True or false?

John Walser
Milwaukee, Wisconsin

John:

According to the Racine, Wisconsin "Heterodyne" publication, T'ain't so! Despite a recent article in a popular magazine to the contrary, the State of Wisconsin is not about to license CB'ers with special auto plates. To the best of our knowledge, no state legislature has actually said "OK" to such a proposal to date. We'd love to hear the full story if some state has officially adopted CB license plates. How about it, fellows?

Ozzie

Dear Sir:

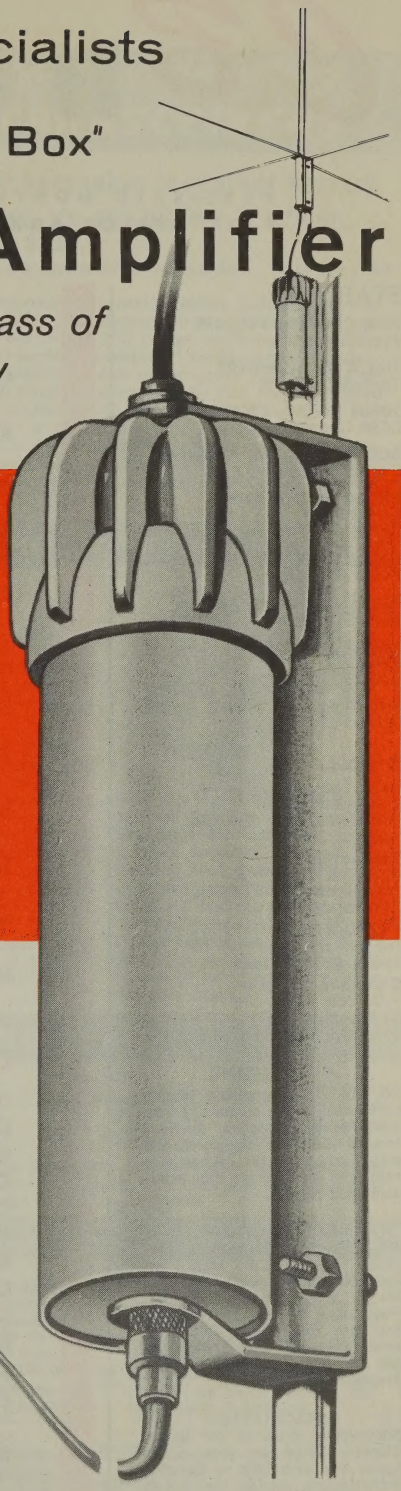
I am not a CB'er yet, but I am going to be. I have been listening on the band for some time as an SWL. Last Sunday (March 24) I heard several stations from California on skip talking about CB Horizons and some articles you have printed. Naturally, if I am going to be a CB'er I want to have the CB'ers magazine. I listen on a Hallicrafters SX-100 receiver.

Arnold Rodgers
Lansing, Michigan

NEW antenna specialists M-82 "Black Box"

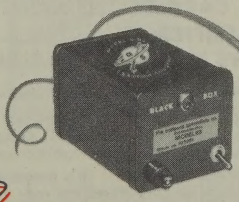
CB Antenna Amplifier

announcing an entirely new class of citizens band power accessory that gives you . . .



fantastic new performance into and out of your present CB equipment

Forget everything you know about the "talk and hear power" of your present CB equipment. This remarkable new, self-powered device has changed the standards. HOW? It produces 100% legal power **at the antenna,** regardless of base station output capability or line loss. (Boosts incoming signal, too.) RESULT: 20 db gain (minimum) received . . . 10 db transmit modulation gain (plus varying carrier gains) from base. THE BENEFIT: Clarity and volume never before possible at both ends. Drastic reduction of inherent mobile noise and interference. It's like having another full turn on your volume controls! P.S. Meets F.C.C. limitations, naturally!



You've got to hear it to believe it. Your nearest citizens band supplier probably is demonstrating the Antenna Specialists brand M-82 "Black Box" right now . . . or write for specifications to

"Stripes of Quality"

Reg. T.M.

the antenna specialists co.

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CIRCULATION

CB Horizons is now read by more than 70,000 CB radio enthusiasts every month, covering all 50 States, Puerto Rico, U.S. Possessions, Canada, and 18 Central and South American countries where 27 mc transceivers are in use. Detailed circulation breakdown upon request.

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TABLE OF CONTENTS

FEATURES

CB FUN FOR DULL SUMMER EVENINGS
Part 15 Hidden Transmitter Hunts 8

ROLLS ROYCE CB RIG
The Ultimate HE-20 Conversion 16

TEST EQUIPMENT FOR CB
Build This Power Output Meter 22

TALK ABOUT A CROWD!
CB at the Parts Show 24

THE FCC IS SMILING IN SEATTLE
Citizens Band Goes to the World's Fair 26

SUPER SMALL BASE STATION ANTENNA
CB Bow Tie 27

SPOT TROUBLE BEFORE IT HAPPENS
Transceiver Trouble Shooting 32

ABOUT THOSE SPANISH SIGNALS
CB in South America 36

GRS NEWS FROM CANADA
First Report from XM44168 37

10 CODE CONFUSION
Now You Know 43

WHO WON WHAT-WHEN?
CBH Raffle Report 48

NO MORE NOTARIZATION; $500. FINES
Our Man in Washington 56

DEPARTMENTS

OZZIE'S MAIL BOX 4
CB IN SOUTH AMERICA 36
GRS IN CANADA 37
CB SHOWCASE 38
CBH LAB REPORTS 39
CCM REPORTS 42
GAR'S GABBINGS 52
CBL CARD OF THE MONTH 53
CLASSIFIED 54
NEWS FROM FCC, WASHINGTON 56

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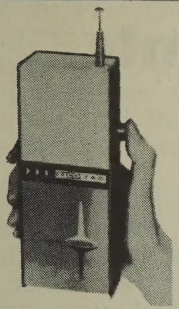
COVER: OOPS—here come the transmitter hunters! Read all about "CB Hidden Transmitter Hunts"—page 8.

FOR POWER OR PORTABILITY . . . UNCOMPROMISING ENGINEERING WITH

EICO® CITIZENS BAND TRANSCEIVERS



Size: 7⅛" x 2⅝" x 1⅝", weighs only 19 oz. . . . fits comfortably in hand, slips easily in jacket pocket.

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Complete with rechargeable battery & charger. No license or permit needed . . . no age limit

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NEW VERSATILITY WITH NEW DELUXE 770 SERIES

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Model 770†: 117 VAC only	$79.95	$109.95
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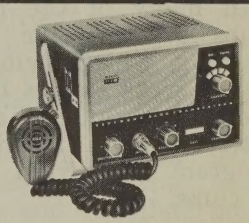
†U. S. Patent #D-190,970 *Including Posi-Lock Mounting Bracket

"A steal . . . Better than manufacturing specs . . . Publisher Cooper reports base-to-mobile contact out to 22 miles consistently, often to 40 miles . . . Thorough manual is almost a handbook for CB radio."—**CB HORIZONS**

Front panel selection of one of 3 transmit crystals with continuous receiver tuning over all 23 CB channels, or a fourth transmit crystal with appropriate receiving crystal. Press-to-talk button on microphone; transmit-receive switching accomplished by high-quality relay with minimum capacity between contacts to prevent current leakage at RF frequencies. Superhet receiver with RF stage for high sensitivity & proper signal-to-noise ratio. 1750 KC IF strip for unequalled image rejection & freedom from oscillator "pulling" on strong signals. IF strip prealigned so that only "touchup" alignment without instruments is needed. Current metering jack in series in cathode circuit allows checking of input power to transmitter final and adjusting it to FCC limit. 13-tube performance (4 dual function tubes, 4 single function tubes, plus germanium diode). Adjustable squelch control (in addition to automatic noise limiter). Optimum adjustment to any popular CB antenna assured through use of variable pi network in output. AVC. 3" x 5" oval PM speaker. Supplied complete with 8 tubes & 1 transmit crystal (extra crystals $3.95 each).



The entire transmitter oscillator circuit and RF final in every EICO transceiver, kit and wired, is premounted prewired, pretuned, and sealed at the factory (about 3 hours of skilled labor, precision adjustments and testing), complying with FCC regulations (section 19.71, part d). This permits you to build the kit and put it on the air without the supervision of a commercial radiotelephone licensee.

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Model 761: 117 VAC and 6 VDC*	69.95	99.95
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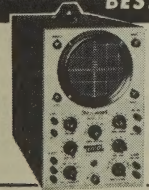
*Including Posi-Lock Mounting Bracket

Same uncompromising engineering, same care and precision, and largely the same circuitry as in 770 series (above), lacking only multiple-channel transmitting, crystal receiving, and push-to-talk microphone.

BEST BUYS IN SERVICE INSTRUMENTS: *everything from Scopes to Probes*



DC-5 MC 5" Scope #460.
Kit $79.95
Wired $129.50.
Also available—
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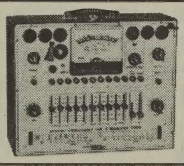

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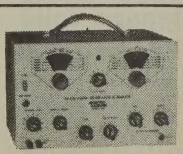

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Part 15
Hidden Transmitter Hunts

by Donald L. Stoner, 11W1507
Stoner Electronics
Alta Loma, California

CB clubs are a bear to keep together. After the usual run of movies from the phone company, talks by distributors and manufacturers of CB equipment and a session of listening to Ivan Loucks on record, many CB club leaders wonder "what do we do now?"

In many of the more progressive clubs an intensive program of CD training, which includes first aid and rescue work, comes to the rescue and the club continues to operate with peak interest. More recently the REACT program has stirred renewed interest in clubs.

But despite the best efforts by the most capable Club leaders, "summer doldrums" almost always catches a club with its attendance down and interest lags.

Here is the solution to that problem! Its not an original idea, but the adaptation to CB radio is brand new and it does have many practical sides.

Its called "The Hidden Transmitter Hunt" and here is how it works.

Following some careful preparations, one or two club members "hide" with a Part 15 transmitter. Then at a pre-set time on a predetermined channel, they begin to transmit for 1 minute out of five, two out of ten or whatever has been agreed upon. At the instant they begin to transmit the other club members, located in their mobiles equipped with Part 19 transceivers start "looking for the hidden transmitter". Using special directional loop antennas, calibrated S meters and more Part 15 transceivers, the "hunters" close in on the hidden transmitter. The hunt requires a great deal of ingenuity, patience and even a little skill. It's good basic training for all club members and a whale of a lot of fun. The first one to find the hidden transmitter is declared the winner (if you work strictly on "first one in is the winner basis") or the winner may be the person who chalks up the lowest mileage on the speedometer while tracing down the elusive Part 15 unit.

A schematic is shown with this article, for a specially designed "Horizons Part 15 Hidden Transmitter". This unit has been put through its paces in Southern California with excellent results up to 3 miles. And it stays within the Part 15 regulations. So where do we go from here? Read on.

Every licensed CB'er should be familar with Part 19 of the FCC Rules and Regulations. Another very important part of these rules, but less well known, is Part 15. This is the section under which low power devices are licensed. Most CB'ers have seen the tiny walkie-talkies for use on the 27 mc. band but few realize that they are in a class by themselves, so to speak. Here's what the FCC says on Part 15 equipment:

(1) *the power input must be less than* 100 *milliwatts*

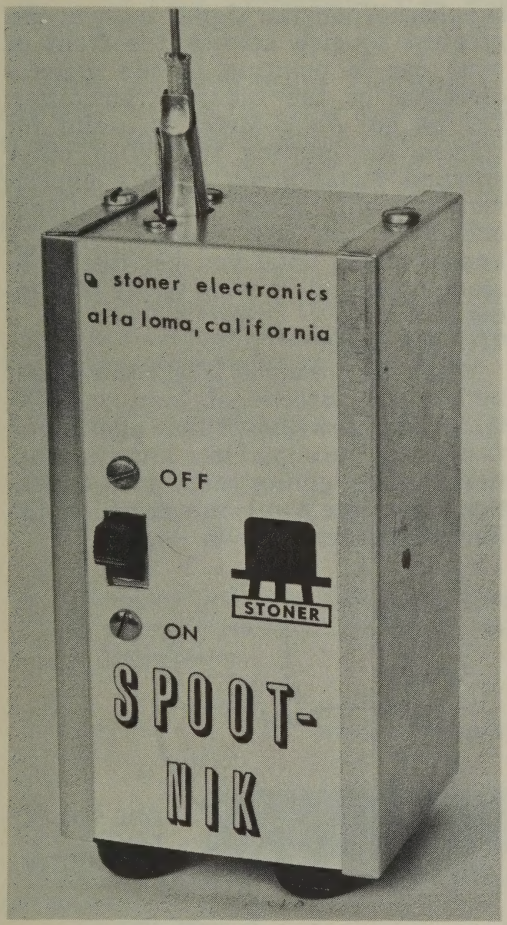
(2) *the antenna must be less than* 5 *feet long*

(3) *the transmission and all modulation products shall be within the band* 26.97 *to* 27.27.

(4) *any operator . . . who causes harmful interference to an authorized radio service, shall promptly stop operating the device until the harmful interference has been eliminated.*

This last section is very important. Part 19 equipment, or any other service in this band has "right of way" over Part 15 equipment. Keep this in mind.

Note that nothing is said about the use for Part 15 equipment. "Hamming it up" is not prohibited, extended transmission periods are not prohibited and call signs are not required. Thus you can see that Part 15 equipment is intended for an entirely different purpose



STONER ELECTRONICS CB "Spoot-Nik", model SE-103. This 27 mc. tone modulated beacon transmitter certified for part 15 of the rules and regulations. It can be used as a signal source for Citizen's Band transmitter hunts. The unit employs a two transistor transmitter and two-transistor chopper/modulator and has a maximum range of approximately three miles. It is custom made to customer requirements and is priced at $24.95 less crystal.

from Part 19 gear. The only thing they have in common is the frequency sharing. Because of their low power and short range the stringent regulations connected with higher power Part 19 equipment is not necessary.

The important point is that Part 15 does not specify the application of this low power equipment. Therefore it can be assumed that this type of gear can be used as a signal source for transmitter hunts.

What To Use—Just about any Part 15 transmitter which has been certified to comply with the rules can be used as a signal source. The *average* transistor unit will have a range of about one-half mile. You can keep up a constant stream of chatter to guide the "hunters" to the "fox".

A unit specifically made for transmitter hunts is also available. The Part 15 unit, called the "CB Horizons Part 15 Hidden Transmitter" is custom-built to specified frequencies by Stoner Electronics and is their Model SE-103. The circuit consists of a two-transistor transmitter and a two-transistor chopper/modulator which insures 100% modulation. Because of the high efficiency circuits and complete modulation, this unit has a range between one and three miles.

What Frequency to Use? You can use any frequency in the regular Citizens Band *except* Channel 1 (26.965 mc) for this is outside the Part 15 band. If you have a lot of activity in your area, and the possibility of harmful interference exists, it would be wise to use a clear channel frequency. For example, an excellent spot for the transmitter is on 27.260. This frequency is clear of any Part 19 equipment. The transmitter can also be placed on one of the five existing radio control channels or even between the regular CB channels. Part 15 does not specify an exact frequency, only that the carrier and modulation be within the specified band.

How is a hunt run? There are as many answers to this as there are people running them! Regardless of how you do it, always have a set of rules which are clearly understood by everyone. There is always the sore-head who misunderstands and wants to wrap a "Stinger" around your head! Decide whether the transmitter is to be

attached to a car, hidden in a garage, "up a tree," or what!

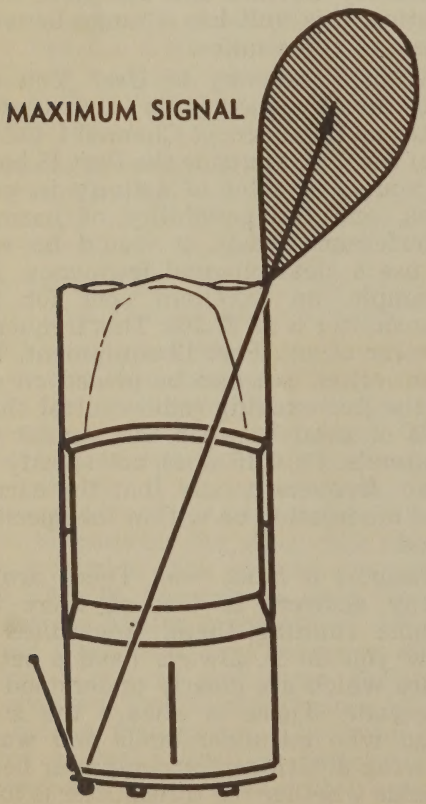
Probably the best way, which provides the most hiding spots (new ones get to be a problem after a while) is to require the transmitter be within 25 feet of a road, street or other passageway suitable for a car. The transmitter should always be hidden on public property! If you want to play safe, you might advise the local authorities that you are going to have a hunt and check the location with them. It could save some embarrassing explanations later!

Also decide if total time determines who wins or if it should be time versus total mileage. The latter rule tends to discourage speeding.

One thing you cannot do! It is strictly illegal to use your part 19 *equipment for communications in connection with the hunt. This is not the intended use for Part* 19 *equipment.*

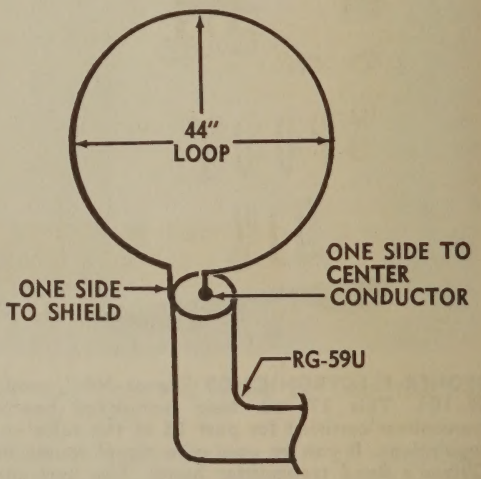
How Do I Find The Transmitter? Signal strength is the key. As you approach the hidden transmitter the signal strength will build up considerably. This can still be a hit or miss affair, however, without direction finding (d.f.) equipment.

If your CB antenna is mounted at the back of the car, it will produce a noticeable directional effect. If, for example, the whip is on the left rear bumper, the direction of maximum signal will be when the right front fender is pointing at the hidden transmitter. The technique is to drive in a slow circle (use a big parking lot) while your "navigator" adjusts the squelch. When the signal trips at the greatest squelch setting, the front of your car is pointing in the general direction of the hidden transmitter. Off we go! An S-Meter is useful for transmitter hunting too. With other antenna installations a little experimenting will reveal the directional effects of the car. Practice with a known signal until you get this technique down pat. It's the secret of coming in first.



THE DF LOOP

While we are about it let's talk about building a directional loop, or "DF loop". This is a gadget that allows you to peak up the signal in a known direction, thereby giving you a good indication (accurate too!) the direction the Part 15 transmitter is in.



The loop is exactly as it sounds, a loop of wire or copper tubing. The diagram (2) shows what we mean. A piece of copper tubing (1/4 inch O.D. gasoline tubing, available at all auto supply stores) is just fine. It is bent carefully into an exact circle 44 inches

NEXT MONTH—
in CB HORIZONS MAGAZINE

AUGUST — Our Annual CB Equipment Directory
'The Greatest CB Publication Ever!'

Here it is once again. The Annual CB Horizons August Equipment Directory. A **complete** guide to every piece of CB equipment on the market today. Complete specifications including tube line-ups, operating voltages, gain, selectivity, sensitivity, number of channels—everything you need to know to evaluate all known makes of CB transceivers, meters, antennas, audio compressors, crystals, microphones, cables, connectors —you name it!

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attached to a car, hidden in a garage, "up a tree," or what!

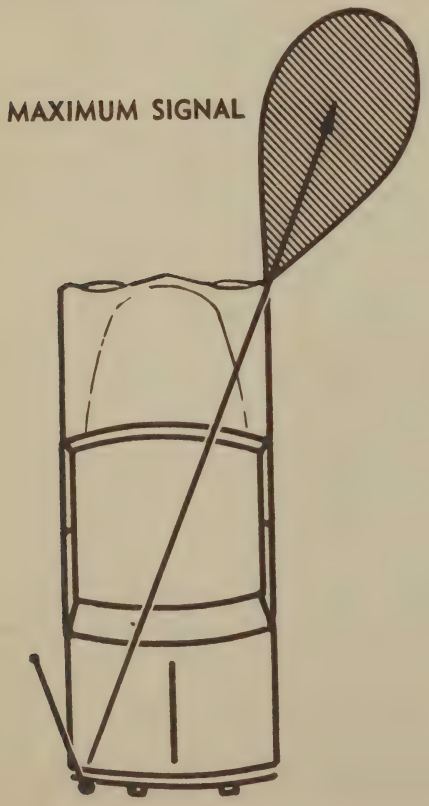
Probably the best way, which provides the most hiding spots (new ones get to be a problem after a while) is to require the transmitter be within 25 feet of a road, street or other passageway suitable for a car. The transmitter should always be hidden on public property! If you want to play safe, you might advise the local authorities that you are going to have a hunt and check the location with them. It could save some embarrassing explanations later!

Also decide if total time determines who wins or if it should be time versus total mileage. The latter rule tends to discourage speeding.

One thing you cannot do! It is strictly illegal to use your part 19 *equipment for communications in connection with the hunt. This is not the intended use for Part* 19 *equipment.*

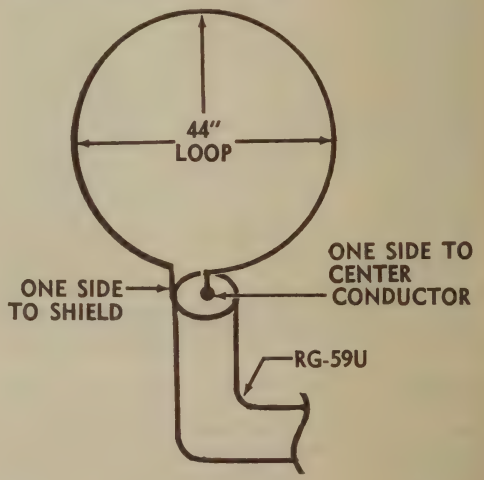
How Do I Find The Transmitter? Signal strength is the key. As you approach the hidden transmitter the signal strength will build up considerably. This can still be a hit or miss affair, however, without direction finding (d.f.) equipment.

If your CB antenna is mounted at the back of the car, it will produce a noticeable directional effect. If, for example, the whip is on the left rear bumper, the direction of maximum signal will be when the right front fender is pointing at the hidden transmitter. The technique is to drive in a slow circle (use a big parking lot) while your "navigator" adjusts the squelch. When the signal trips at the greatest squelch setting, the front of your car is pointing in the general direction of the hidden transmitter. Off we go! An S-Meter is useful for transmitter hunting too. With other antenna installations a little experimenting will reveal the directional effects of the car. Practice with a known signal until you get this technique down pat. It's the secret of coming in first.



THE DF LOOP

While we are about it let's talk about building a directional loop, or "DF loop". This is a gadget that allows you to peak up the signal in a known direction, thereby giving you a good indication (accurate too!) the direction the Part 15 transmitter is in.



The loop is exactly as it sounds, a loop of wire or copper tubing. The diagram (2) shows what we mean. A piece of copper tubing (1/4 inch O.D. gasoline tubing, available at all auto supply stores) is just fine. It is bent carefully into an exact circle 44 inches

NEXT MONTH—
in CB HORIZONS MAGAZINE

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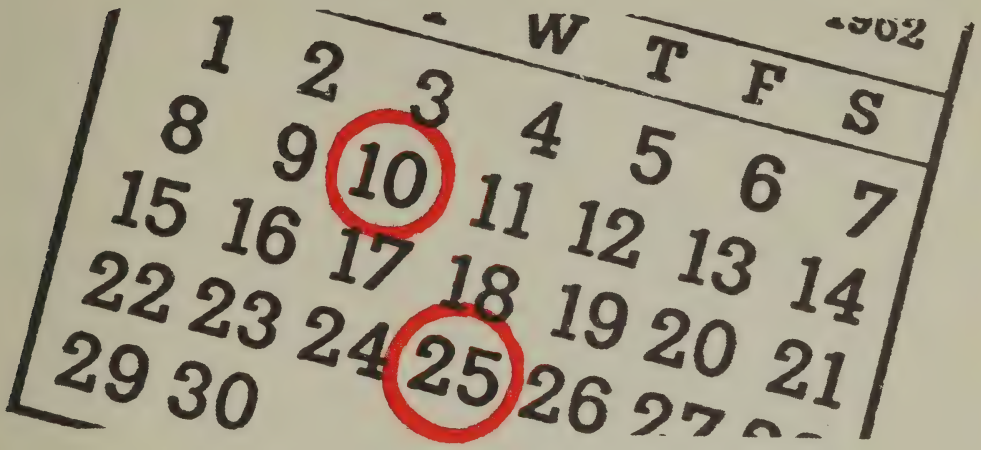

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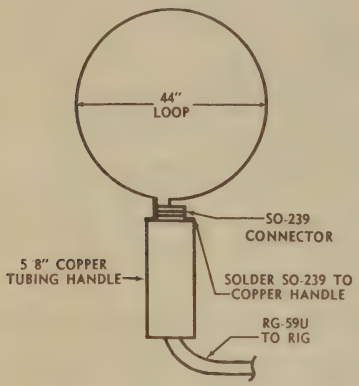
long (from end of straight tubing to end of straight tubing). The ends of the tubing are flattened for about 1/2 inch in a plane perpendicular to the radius. Number 28 holes are 1/4 inch from the ends of the flattened tubing and the loop is attached to an SO-239 coax recepticle as shown in diagram three. One end of the loop is attached to the outer conductor on the SO-239 while the other end is attached to the center conductor lug on the loop.

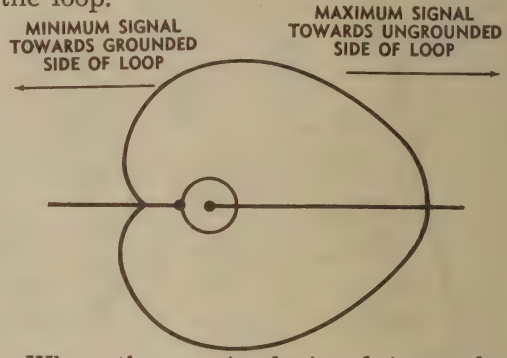


Approximately 70 inches of RG-59U coax is connected to the SO-239 and the loose end of the RG-59U is fitted with the proper plug to mate to your Part 19 transceiver. This is used for receiving only! Do not hit the transmit button with the loop connected, or you will quickly flatten your final tube!

A suitable handle for the DF loop may be constructed from 5/8 inch brass or copper tubing 10 inches in length. This can be soldered to the SO-239 base with some care.

USING THE LOOP

The loop is hand held out the window of the car by the "navigator" (NOTE: One CB'er acts as navigator, running the CB set-watching the S-meter and handling the loop-while the driver keeps his mind on driving!) a few inches above the top of the car. With the loop held out the window of the car the receiver is tuned to the hidden transmitter frequency. It may be necessary to use the regular mobile whip until you get within a mile of the Part 15 transmitter under some conditions. Rotate the loop and observe the variations in signal strength either by ear or on the receiver S-meter if you have one. Maximum signal always comes in the plane of the loop, in the direction of the ungrounded end of the loop (see diagram 2A). Minimum signal is in the same plane but in the reverse direction, the grounded end of the loop.



When the received signal is weak, use the direction of maximum signal to track down the Part 15 transmitter. When you get close to the hidden transmitter and the received signal is strong, use the minimum null (grounded side) as your indicator for a peak in signal direction.

Results have shown the signal received by the loop to be 25 percent of the signal received by a standard whip. This means you will have to get down to a mile with your car whip before breaking up the directional loop for the final tracing down of the Part 15 transmitter.

A Part 15 transceiver is also a handy gadget to have along on the homestretch of the "foxhunt". When you hold the transceiver out in front of you, with the cabinet about waist-high, a pronounced directional effect can be noted. As you hold the unit in front and turn, the signal will come and go. The signal should be the strongest when you are looking in the direction of the hidden transmitter. Practice this technique with a known 10-20 signal to find the best directional effect. As you get closer to the hidden transmitter you can telescope the antenna as required to attenuate the signal. Use the weakest signal you can hear. This will make the signal peak much more no-

(Continued—Page 20)

THE ANTENNA IS 50% OF YOUR MOBILE SYSTEM: make sure of optimum performance with the all-new Stinger Model ST-27. Provides a sleek-look-of-quality package for automotive, aircraft, and marine applications!

Proven best of its type available today, Stinger's latest mobile whip answers: **WHAT'S NEW?** Installation: now much easier than ever, done **entirely** from the outside surface! No need to drop headliners! Mount: highly polished, hand-polished chrome finish. Engineering: new electromechanical features that provide easy mounting, better performance (up to 3-db system gain for greater range; improved signal-to-noise ratio). **WHAT'S OLD?** Length: still less than 30 inches, for vehicle rooftop mounting without damage to or from overhang structures. Theory: still a design based on the rf, inductive, transformer-coupled, high-gain theory . . . for higher transmission efficiency, extra-high-gain reception, and relatively equal transceiving characteristics in all directions. Guarantee: still with a money-back performance guarantee. **YOU CAN'T GO WRONG** . . If you're in mobile, Class D, 27-mc operation, the Stinger ST-27 is designed for you. Request Bulletin SM-101, or see your franchised Stinger distributor for a demonstration today! **Calibration Standards' Stinger Products, Box 2315, City of Industries, La Puente, Calif.**

Stinger*

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You Asked For IT!

The ULTIMATE HE-20

— JIM KYLE, 10W0901 —

Last month, you may have noticed in the back of the magazine a reader survey card.

The returns poured in—and we were slightly surprised (and greatly gratified) to find that "Project Custom" which we had been working on for six months was the hottest single subject in CB radio!

"Project Custom", in case you hadn't guessed, refers to the customization of Lafayette's popular HE-20 series of transceivers.

At this point, a slight comment might not be out of order. While rigs from many other manufacturers offer more features than do the HE-20 family, this little rig packs a powerful punch! Don't underestimate it . . . and with the modifications described here, it easily justifies the label "the most advanced rig on the air today."

We converted the HE-20A; now, of course, the HE-20B is the current model. The modifications described here will also work with the HE-20B, but it's possible that the step-by-step details might differ a bit.

The biggest single problem in doing this modification job, frankly, was to find points which could stand improvement. Power output was already up with the best of them, and transmitter audio was also excellent. This left only the receiver and the metering circuits (plus the power supply) as areas where modifications might be profitable.

We started in the receiver—and that's where we came up with the biggest single improvement.

As shipped from the plant, the HE-20 has a series-shunt noise limiter circuit. While it's as effective as most standard ANL circuits around these days, it doesn't do much for really bad ignition noise. Since we knew of not just one but *two* unconventional ANL circuits not in use by any manufacturer, we decided to modify this region first.

For a time, we considered using a "rate-of-change" limiter (first described in this country in the April, 1961, issue of 73 *Magazine* by CBH Tech Ed Kyle) but after running some tests comparing the R/C limiter to a Japanese circuit, we found that the Japanese design (called the Makino circuit after its designer) offered vastly improved performance with a much simpler circuit. So we used it—and this is the first widely-read description in this country of the Makino circuit!

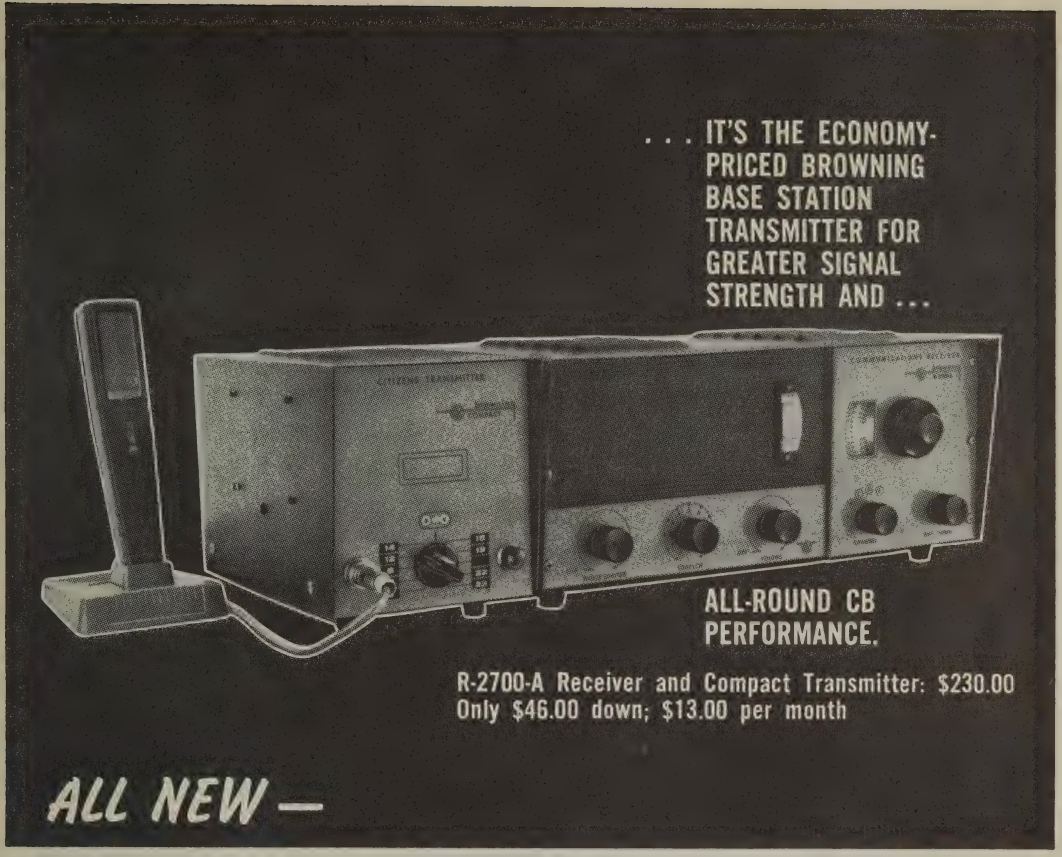
To install the Makino limiter, first take the HE-20 chassis out of the case by removing the screws on bottom and at the top of the front panel. Place it on the workbench upside down.

Next, locate the socket for tube V5 (the 6T8). Remove all connections from pins 1, 2, and 3 of this socket. Remove 1-meg resistor R4 (brown-black-green color code) from the set and place it aside to use later. Remove the green wire from terminal 1 of IF transformer T3 (the other end of this wire did go to pin 1 of the tube). Also remove the green wire from Pin 2 to C4, and throw away. Disconnect the lead from 470K resistor R5 (yellow-purple-yellow) which connects to capacitor C4. Finally, clip out 220K resistors R2 and R3 (red-red-yellow) and place them gently in your junkbox.

At this point, you have ripped out the complete detector-ANL circuit; let's put it back in the Makino circuit.

First, connect the "plus" or cathode end of the 1N34 diode (which originally went to pin 3) to terminal 1 of T3 and solder.

Next, connect the free end of R5 to ground. Connect the free end of the diode to the ungrounded end of C4 (this is the place where R4 and R5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ALL-ROUND CB PERFORMANCE.
R-2700-A Receiver and Compact Transmitter: $230.00
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(Miles Per Dollar)

Designed for use with Browning's R-2700-A, the Compact gets your signals "there" without any "extras". You get full 100% modulation; full 5 watts input; the same R.F. lineup as Browning's popular S-NINE and 23/S-NINE; push-to-talk microphone; front panel switching of 10 channels plus an auxiliary socket for seldom-used crystals. Buy now — take advantage of Browning's combination price. The new Compact transmitter makes possible a low cost base station that provides greater signal strength for new dimensions in CB performance.

Here are just a few of the many top-quality features found in a Browning Compact! ■ Pl-network circuitry for maximum transfer of energy to antenna. ■ Self-contained audio circuitry supplies full 100% modulation. ■ 11 crystal-controlled transmitting channels. ■ Transmitter comes with cables to plug into R-2700-A receiver, ready to go on the air. ■ "On the Air" indicator. ■ Electro-Voice Model 727SR Ceramic Microphone with desk stand furnished. ■ Cabinet styling matches R-2700-A receiver. **OTHER BROWNING CB UNITS:** ■ R-2700-A—Base station receiver ■ S-NINE—Base station transmitter ■ 23/S-NINE—All-channel transmitter ■ MOBILAIRE—Mobile transceiver

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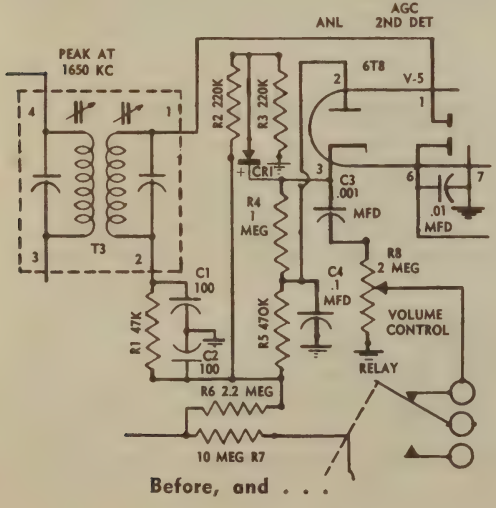
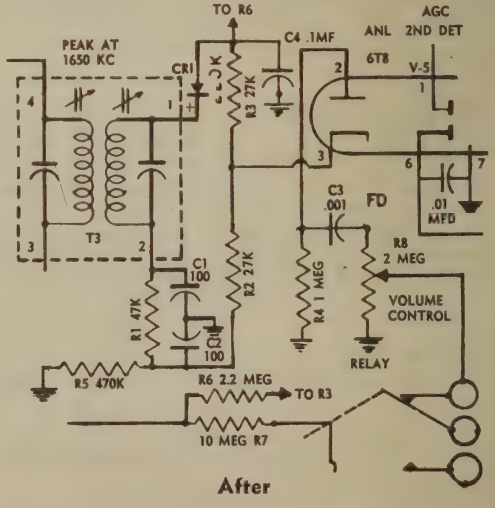
Locating Parts To Be Rewired

originally were connected). Connect a new 27K resistor from this same terminal to pin 3 of the tube socket, and another 27K resistor from pin 3 to the junction of R1, R5, R6, and C2. At the same time, before soldering, remove R6 from this terminal and connect it instead to the ungrounded end of C4.



Before, and . . .



After

Personal two-way radio
is serious business. Wherever
you plan to use it, your only
important measures of performance
are ruggedness, reliability
and range. This was our target
in designing the CB-4.
No gadgets, no gingerbread.
Just an extremely dependable 27 Mc.
portable communications system.
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CB-4
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Power input: 100 MW • Receiver sensitivity: 1 microvolt • Plug-in crystals and transistors for easy channel changeover and service • Shatter-proof, vinyl-clad aluminum cabinet • Fully transistorized • Mercury-type battery (not included).
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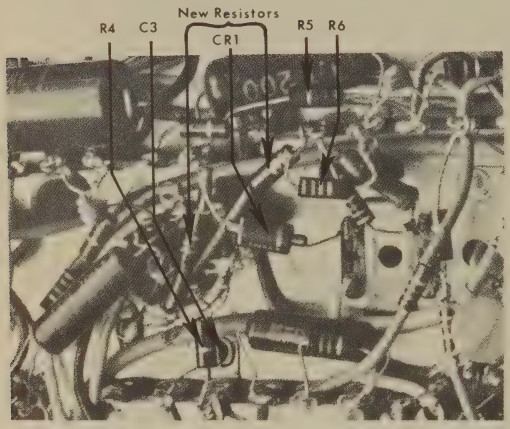
Now, connect R4 (the 1-meg resistor put aside earlier) from pin 2 of the tube socket to ground, and connect the free end of C3 to pin 2 also and solder. The conversion is completed.



Parts After Changes

Before the change, we found an "S-5" noise level in the test Rambler wagon with the engine running. After the change, the noise level did not change with the engine on or off (although a few faint clicks will still get through) and we copied signals which weren't strong enough to deflect the meter needle at all—they were now perfect copy!

With the noise limiter cleaned up, we went to work adding the "frills." The first of these was a crystal spotting switch.

If you use only the "fixed" receive positions, this won't help you much—but if you're like us, you occasionally have need to contact someone who is not on your own channel. Then, a spotting switch makes it easy to find your own frequency come standby time, or to check for other users.

To make this modification, first decide where on the front panel you want to put the switch. We put it just to the the right of the tuning knob—but this space, on the HE-20B, is used by the squelch control.

When you decide where, drill a ¼-inch hole through the panel at the right place and mount a Lafayette no. SW-76 miniature switch in this hole.

Now, go under the chassis and locate the socket for tube V7 (the 6AW8). Connected to pin 2 of this socket is a 47K resistor (yellow-purple-orange). The other end of this resistor connects to a .001 mf capacitor, to a 56K resistor (green-blue-orange), and (through a length of hookup wire) to the transmit-receive relay and other circuitry.

Disconnect this resistor where it connects to the other components but leave it connected to pin 2. Run a wire from the now-free end of this resistor to the center terminal (on one side) of the new switch. Run a wire from one outside terminal of the switch back to the other components where the resistor was originally connected, and another wire from the other outside terminal to any convenient ground connection on the chassis.

Now, in one position, the unit will operate just as always before. With the switch in the other position, the transmitter oscillator will put out a marker signal (which won't reach the air) so you can find your channel with the receiver.

And there you have it! The ultimate transceiver with everything you could possibly want on your HE-20 series transceiver, courtesy of the CBH Lab and technical staff.

10-7

HIDDEN TRANSMITTER

(Continued from Page 14)

ticeable. With strong signals, the a.v.c. in the receiver tries to smooth out the variations in strength.

Other Uses—CB transmitter hunts are a whale of a lot of fun! They can be the glue that sticks your club together and the magnet that draws new members. Put a lot of work into organizing the hunt so that it runs smoothly. The word will get around.

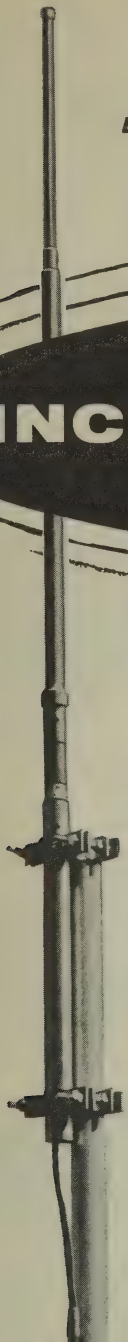
There is another equally important use for the transmitter hunt. Each town has their "nonconformist" who insists on generating blank carriers, whistling and coughing to create deliberate interference, etc. After a few transmitter hunts you will be able to pin these "clowns" down in very short order! The fact that you are preparing to intercept them, discourages all but the real "weirdies."

That's the CB hunt story. Let's hope you have a ball and "tally-ho".

10-7

MARK *Static Sheath**

Eliminates Noisy Precipitation Static*...Improves Signal-to-Noise Ratio
Affords up to 20 db Operating Gain . . . Increases Receiver Sensitivity
Extends Intelligible Coverage. Easiest to install.



INCREASE COVERAGE

MARK II SUPER BEACON FIXED STATION ANTENNA
with exclusive Static Sheath*

Design advantages of the new **MARK II** now make it possible to step up the efficiency of your CB operation, and maintain clearer communication over greater distances. 19 feet overall, the omni-directional **MARK II** makes fullest use of the 20-foot legal length limit. Requires no radials or skirts. Provides 1 db gain over ground plane antennas. Employs a full half-wave radiator voltage fed through a special launcher-matcher cable section for excellent impedance match over the entire citizens band. Low angle radiation insures utmost efficiency and maximum contact with mobile units.

Improved mechanical features and extra-rugged base support pipe add to its reliability. Simplified clamp mounting makes installation easy.

Precipitation Static** is caused by charged particles in the air impinging in a continuous stream on metal antenna radiator surfaces. It is revealed by a continuous hissing background noise. The patented **Mark Static Sheath is a tough, durable, dielectric plastic covering that acts as an electrical insulator and eliminates static interference caused by the precipitation effect.

MARK HW HELIWHIP®* MOBILE and MARINE ANTENNAS
Top-Loaded, 50-Ohm Load . . . with Static Sheath *

Shortened mechanical structure and other Mark features bring new efficiency, new compactness, new convenience to CB communication. Molded Fiberglas, with Static Sheath.* Designed to replace lengthy stainless steel whips. Far superior to whip and loading-coil combinations. Can be located on upper portion of vehicle such as trunk lid, cowl, fender or hood to obtain proper ground plane. Single-hole mounting. 18", 3', 4' and 6' mobile models. **Heliwhip** Marine Antenna (6' long) eliminates need for metal ground plane.

See Your B & K Distributor or Write for Catalog HW19-CB

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Dept. CB-5, 1801 W. Belle Plaine
Chicago 13, Illinois

Power Output Meter

— STAFF —

One of the simplest, yet most useful, items of test equipment for any CB operator is a power-output meter.

With such a meter, you can tell instantly if your transmitter is working properly with good efficiency—and also whether the modulator is doing its job right!

Best of all, the meter can be built for less than $10, in just a couple of hours.

Basically, a power-output meter consists of a dummy load which looks to the transmitter just like a good antenna, plus an RF voltmeter which measures the voltage across the "antenna". Since power is proportional to voltage in any given circuit, the voltmeter can be calibrated directly in watts.

To use the CBH power meter, simply disconnect your antenna lead from the rig and connect the power meter to the transmitter in its place. Turn the transmitter on, and read power output in watts directly from the scale.

Electrically, the power meter is exceptionally simple. Mechanically, it requires a bit of care.

In the first place, ordinary resistors have quite a bit of inductance associated with them (that's the nature of the beasties)—and this inductance must be eliminated.

To do this, we make the dummy load part of the meter from four 220-ohm 2-watt *composition* resistors mounted between two discs of metal . . . The tops of two tin cans may be used; this material takes solder well and is easy to cut, as well as being easily obtainable anywhere.

Make the discs one inch in diameter, and punch four holes in each disc as shown in Figure 1. Then thread the leads from one end of each resistor through the holes in one of the discs, drawing the resistor up to 1/16 inch from the metal, and solder. Cut off the excess lead. Now repeat the operation with the other disc and the remaining leads; the finished unit should appear as shown in Figure 2.

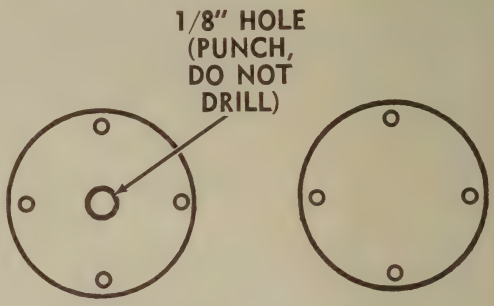


Figure 1

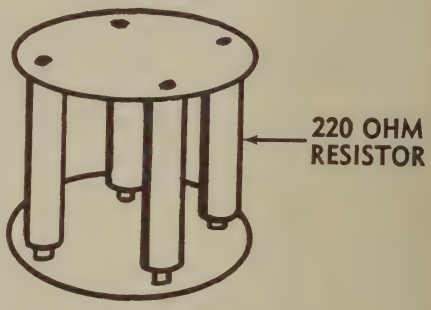
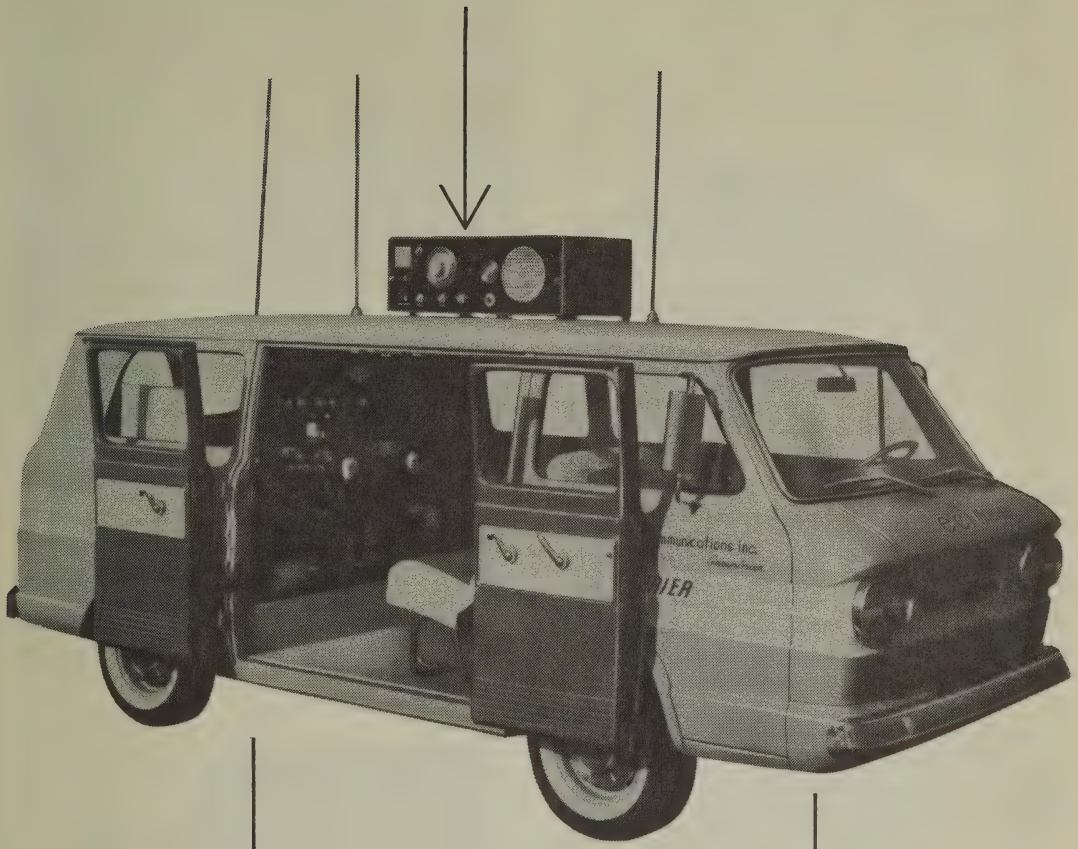


Figure 2

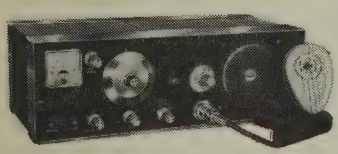
At this point, cut and drill the box for the meter and the input connector as shown in Figure 3. Mount the input connector in its hole, and attach the dummy load assembly with a sheet-metal screw through hole A. Mount a 3-terminal tie point strip with a 6-32 machine screw at hole B.

Now comes the tricky part; if you want a direct-reading scale, make a photo copy of the meter face shown in Figure 4. Now disassemble your meter —CAREFUL, those tiny screws get away pretty easily!—and remove the existing scale plate. Be very cautious

(Continued—Page 35)



COURIER MOBILAB?



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- **Equipped with 3 Courier 1 CB units, 3 antennae, audio amplifiers, Variac, scopes, meters, microphones, P.A. System, etc.**
- **Checks and measures any unit from any source for modulation, power output, DC current, standing wave ratio.**

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Scoop From Horizons!

CB AT THE Parts SHOW

— Staff —

Every year, in the month of May, the Electronics industry puts on its best bib and tucker and heads for the Windy City (Chicago). The annual **May Parts Show** usually brings out some 500-750 manufacturers who take booth space to show-off their new equipment for the coming 12 month period. The show is principally for distributors of electronics gear, CB not excepted, and distributors were there by the thousands! The manufacturers were out to introduce (and take orders for) their new gear, the distributors were there to see what "other brands" have to offer and perhaps form a new affiliation or two towards stocking new or better equipment for their area.

CB Horizons was on hand to take secret photos and con secret information from manufacturers and engineers, about the newest of the new gear. Our report follows.

Much of the equipment we saw or heard about **will not** be on the market for several months. In many cases manufacturers brought engineering proto-types or lab mock-ups of their new gear because production line runs are not scheduled to start until late summer or early fall. So don't run down and badger your poor dealer for this new gear just because you see it in print here. It **may** be some months away yet!

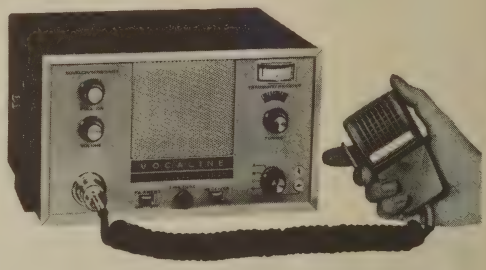
NEW TRANSCEIVERS

The **Hammarlund Manufacturing Co.,** 53 West 23rd Street, New York 10, N.Y., was on hand with a very novel approach to 23 channel operation. Called the **Hammerlund CB-23,** this transceiver is a dual conversion superhet receiver, has squelch, S-meter, personal listening headphone jack, and vernier tuning control for fine tuning of the receiver. Using a unique approach to crystal control, every channel (23 in all) is at your fingertips on a directly read window dial that allows you to read in large numerals **only** the channel you are switched to. It will operate on both 117 vac and 12 vdc. Tentative release date is late summer or early fall. No photo is immediately available but the rig is swell looking!

Webster Manufacturing, 317 Roebling Road, South San Francisco, California has a beautiful new design that stopped the show in their wing of the exhibit area. The model "440" is under the Bandspanner label (same as used on Webster's high quality CB antennas) and offers the following features: 10 crystal controlled transmit or receive channels, with tunable receiver; dual conversion receiver with 12 vdc or 115 vac operation; automatic noise limiter, automatic volume control, squelch, S-meter (which also indicates antenna current and modulation percentage). The rig really should be shown in color.

The sideboard finish is polished walnut and the front panel is polished aluminum in **soft** blue and oranges. As Webster's Jim Ryan said, "here is a rig that even the most exacting wife can't say 'get that piece of radio gear out or here!' about." This is a late summer item.

Vocaline Company of America, Old Saybrook, Connecticut has a new tunable transceiver which covers all 23 on receive and five fixed transmit/receive channels. A sixth position on the front panel crystal switch includes a crystal



socket on the front panel for "quick-change" of your transmit channel without disturbing the innards of the transceiver. This unit has the same fantastic squelch (85 db of squelch range!) that the PT-27 unit does.

Cadre Industries Corp., 20 Valley Street, Endicott, New York captured the attention of distributors with their new 2 watt portable hand held transceiver. The C-75 unit is two channel, crystal controlled, all transistorized, with novel plug-in module board construction. We saw a very impressive demonstration of the unit's ability to peg field strength meters at the same range as 5 watt transceivers (using identical whip antennas). The engineer behind the project told us a new method of exact matching the transmitter to the self enclosed telescoping whip makes for a very high transmitter efficency. The surprise is the price—$109.50! Hold on though, this is a late summer availability item. Write Joe Gibbs anyhow for the full pre-release scoop.

Cadre also showed a new two-way Radio-Pak (model 500-1) for the Cadre 500 series transceivers. This Radio-Pak houses six volt nickle-cadium batteries for up to 8 hours of emergency

operation, and includes a telescoping whip, carrying handle and convenient mounting accessories. The unit, with Model 500 5 watt transceiver, weighs in at less than 10 pounds. Price is $53.95 with batteries.

The **Sonar Radio Corporation,** 73 Wortman Avenue, Brooklyn 7, New York displayed their new 5 watt dial conversion rig complete with S-meter and illuminated panel. The new unit is in an aluminum case making for lightweight carrying, and includes a push-button crystal spotting switch and low-pass filter for TVI. A very attractive rig with the usual fine Sonar quality for $229.50.

ANTENNAS

The **Tenna Manufacturing Company,** 7580 Garfield Blvd., Cleveland 25, Ohio has come up with a mobile CB antenna product that we have been advocating for some time. This is a completely automatic motor driven CB mobile antenna that raises and lowers from a switch inside the car! Just flip the switch and the top loaded antenna extends to 55 inches. Flip the switch the other way and you have a whip only 9½ inches long! This antenna mounts at any convenient antenna location including the front bumper where the standard auto antenna mounts. The small motor operates from 12 volts, or in other words, your car's electrical system.

You can get the straight dope on this new product by writing to Don Blech at Tenna Company.

Shakespeare (Columbia Products Company, RFD 3, Columbia, S.C.) has a very snazzy looking top-loaded WONDEROD whip at just $5.75. The all fiberglass antenna is four feet long, lean looking, rugged and built to resist every known form of antenna destruction. Its screw in base mounts into all standard springs or mounts and is designed for either replacement applications or new installations. Write to J. Hilton Parsons at Columbia about this one.

ACCESSORIES

Three new accessories were available and each stole the show completely. Fortunately for us, none are competitive!

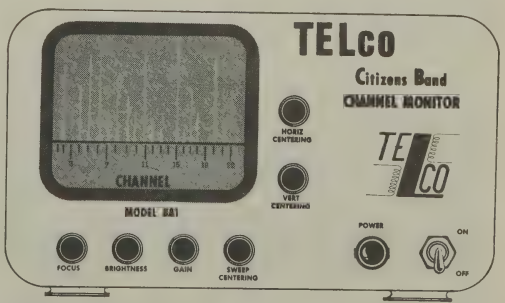
E. F. Johnson Company, Waseca, Minnesota brought out their new selective calling system. As the photo shows, this unit mounts along side the Messanger (or **any** transceiver) and performs as follows: With the Tone Alert connected in, your own transceiver stays completely quiet until your own units call you. Your own units also have one, and when the proper switch is thrown the transmitter on the other end of the line puts out special code signals which turn on your receiver squelch allowing you to hear the station calling. If you aren't on hand to answer your unit's call a neon bulb on the tone alert lights and stays lit until you answer the call. Very ingenious! This is the present-day ultimate answer to skip interference and the annoying chit-chat of the band when you only want to be contacted by your own units. Complete silence except your own units! Several coded calls are available to prevent more than one system from using the same code in the same region. The Tone Alert will cost you $59.95, and is available for both 115vac/6vdc and 115vac/12 vdc. Write to Art Taylor at Johnson about this one.

Antenna Specialists drew a huge crowd to see their fantastic 'Black-Box' antenna Power Booster. This gadget mounts right at your antenna with the feedline from your transceiver going up to it, through it, and then on to the antenna (any antenna-ground plane, beam, etc.). Inside the antenna mounting portion of the unit are four tubes that make up for the loss in your feedline by **boosting** your transmitter power 10 db, and on receive boosting the received signal 20 db! In other words, on transmit we have a

AS/P Black Box and Milt Friedberg

new final amplifier which mounts at the antenna so you won't lose any of that precious 3.5 watts out put before feeding the antenna. On receive we have a signal preamplifier which boosts the signal at the antenna, before it is made weaker by the coax feedline on the way to your transceiver-receiver. **Net result?** Greatly improved efficency all the way around. Price is $79.95 and the model M-82 should be available at your AS/P dealer soon after you read this.

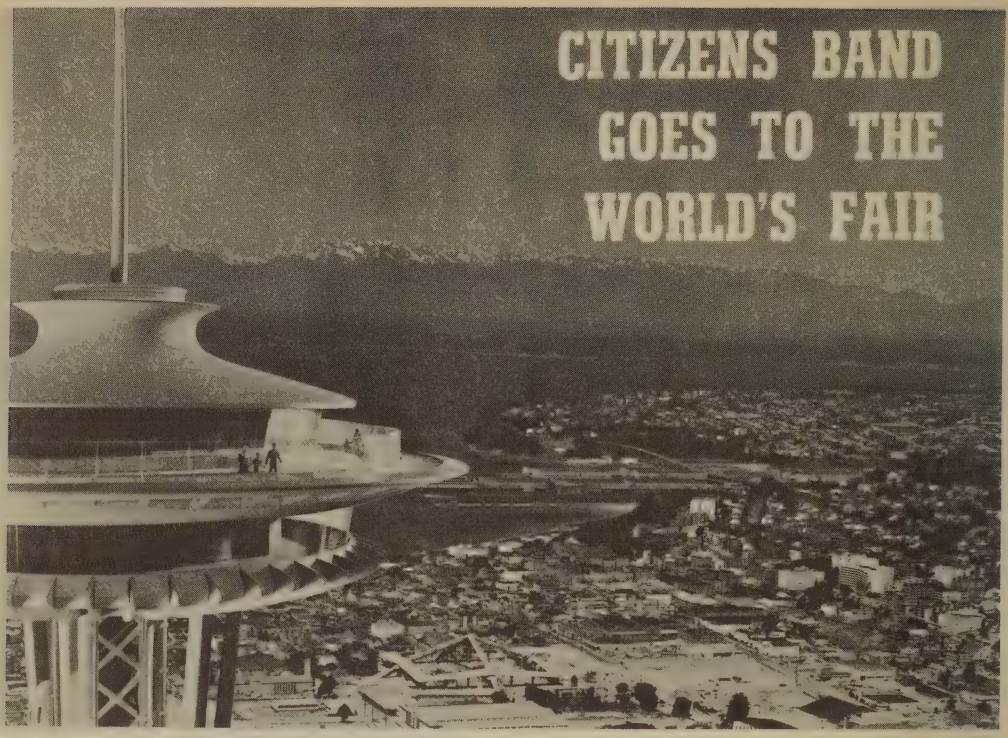
TELco (Tapetone Electronics Labs, Inc.) 99 Elm Street, West Newton 65, Massachusetts has an equally fascinating accessory. Its called the



TELco Citizens Band Channel Monitor. As the sketch shows, this unit uses a cathode ray tube

(Continued—Page 55)

CITIZENS BAND GOES TO THE WORLD'S FAIR



Ever hear of "PICON"? That's "Washingtonese" for a phrase from the Communications Act—"public interest, convenience, or necessity"—which lists the three points which must be considered before *any* radio license of any sort can be granted by the FCC.

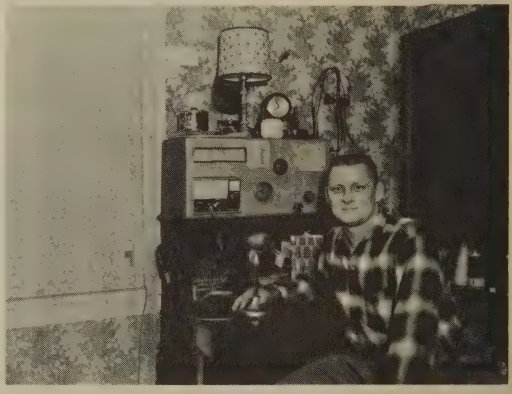
Maybe you hadn't heard of PICON before, but the gang in Washington State CB Association (Seattle, Wash.) are serving it to the best of their ability this summer!

It started on April 15, and continues through the next six months, these CB'ers are monitoring Channel 9, 24 hours a day, to help handle traffic in conjunction with the Seattle World's Fair, Century 21.

The association, composed of members of the CB Minutemen (Seattle), the Capital CB'ers (Olympia), and the Evergreen Area CB Association (Everett), is one of the largest organized CB networks in the nation.

If *you* are planning to visit the Fair, it might be a good idea to drop a line to the WSCBA, P.O. Box 6206, Seattle 88, for a list of monitoring stations and other information. They'll be happy to hear from you!

Some of the CB Minutemen and Evergreen Area CB Association members responsible for World's Fair CB Monitoring. L to R, 14W2109, 14W-1491, 14W1246, 14Q1181, 14W1016.



CB'er Jack Hudson, 14Q0283, Vice President of Capitol CB'ers, Olympia, Washington.

CB BOW TIE

— STAFF —

If you are an apartment dwelling CB'er, or you live in an area where any outside antenna, even the standard ground plane or vertical half wave, cause neighbors to point at your house with scorn and mutter "there's the thing that messes up my televison," you have problems!

If you aren't causing TVI, but the neighbors still accuse you of deviltry because of your antenna, here is just the ticket for you. The Bow-Tie loaded dipole antenna is designed to look like a TV antenna (at least the standard TV viewer won't know the difference) and it is in fact constructed from a standard TV antenna of a type familiar to every suburbanite.

The Bow-Tie is a 'loaded' antenna. In other words it is not full size. In fact it is far from full size. To make up for its 'shortened condition' the antenna is coil loaded at the center. Except for the loading coil, it may be considered to be a standard dipole, with one minor modification. Its fan elements tend to broadband it, thereby giving you a flatter (lower) SWR across the 23 CB channels.

CONSTRUCTION

The parts list for the Bow-Tie CB antenna is listed below. The total cost will be under $5.00, with the major expense being the standard conical TV antenna. It should not cost you over $3.50, and the odds are very good you can buy it for considerably less or get it free from the junk pile of a local TV shop. In the absence of a conical antenna, you can build your own fan shaped elements from scrap aluminum.

Diagram 1 shows the actual electrical design of the CB Bow-Tie. Note this is not a folded dipole antenna but actually a standard dipole, with a loading coil in the center. The antenna is coupled to the coaxial feedline with three turns of no. 14 plastic covered wire. Be certain you use insulation covered wire here—bare wire will short out to the B & W link, causing some pretty severe problems!

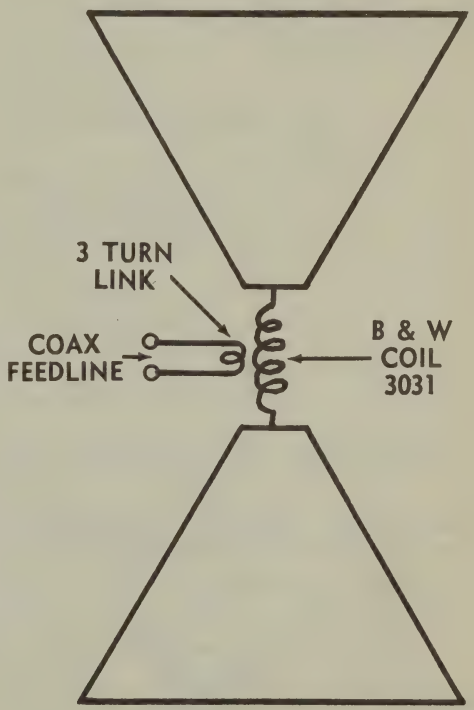


Diagram 1

FIRST

Cut the rear element (reflector) from the conical boom. If your particular conical happens to have triple elements

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- ☐ **RETRACTABLE**—at a touch of your hand. Enables you to have your car washed or put in garage without removing antenna.
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TO ORDER USE COUPON ON PAGE 44

on each side on the "fan", remove the center element. Now re-drill the boom for the U-Clamp on the conical two inches down from the end from which you have removed the TV reflector element, so the holes line up as shown in figure 2. You will be rotating the boom 90 degrees, as shown, so as to vertically polarize the fan elements as figure 2 shows. The boom, as you know, is drilled so as to mount the antenna in the horizontal pattern. This you have just changed.

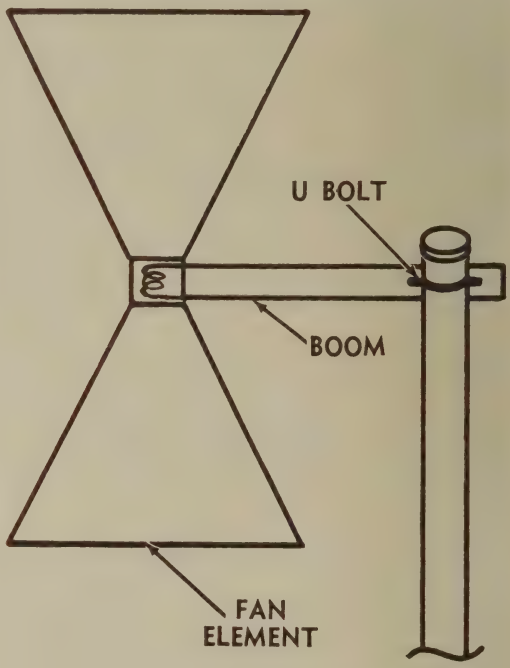


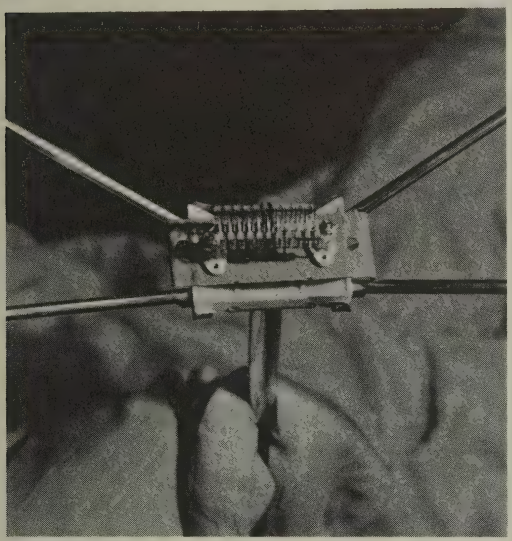
Diagram 2

With the boom re-drilled for vertical mounting, and the center element removed from the front of the "fan" we are ready to go to work on the dipole itself. Measure out 48 inches from the inner side of the mount. Chop off the four elements at this point on each, with a hack saw. Now flatten the outer

Bow-Tie Parts List

1—standard TV conical antenna
1—Barker and Williamson no. 3013 miniductor coil (12 turns no. 16, 1 inch diameter, 3 inches long)
2—ceramic stand-off insulators, 1 inch high
1—2 terminal tie point
miscellaneous hook-up wire

end of the cut elements for 1 inch. From the discarded aluminum elements cut two 30 inch pieces and fashion them to form the ends of the Bow-Tie as shown electrically in figure 1. Flatten the ends for 1 inch on each 30 inch piece (a vise is recommended for flattening the aluminum). Drill the 30 inch pieces and the ends of the 48 inch fan elements for a size of machine screws you have on hand. 6-32 is recommended. Mount the 30 inch end elements to the 48 inch fans with these screws.



Close up—coil mounting

Now mount the two 1-inch stand-off insulators 3 inches apart on the insulating board. The Miniductor coil is mounted on these insulators as photo 2 shows. One end of the Miniductor is connected to one of the antenna sections with a short length of bare no. 12 or 14 wire. Drill and mount a machine screw through the end of the antenna element. Form a loop with the short piece of no. 12 or 14 wire and hook it under the metal screw assuring a good electrical connection between the end of the Miniductor coil and the fan element. The second side of the antenna element is connected to a like piece of wire, mounted under a machine screw mounted in turn on the inside edge of the fan element, and then tapped up on the coil approximately ½ turn from the insulator.

(Continued—Page 51)

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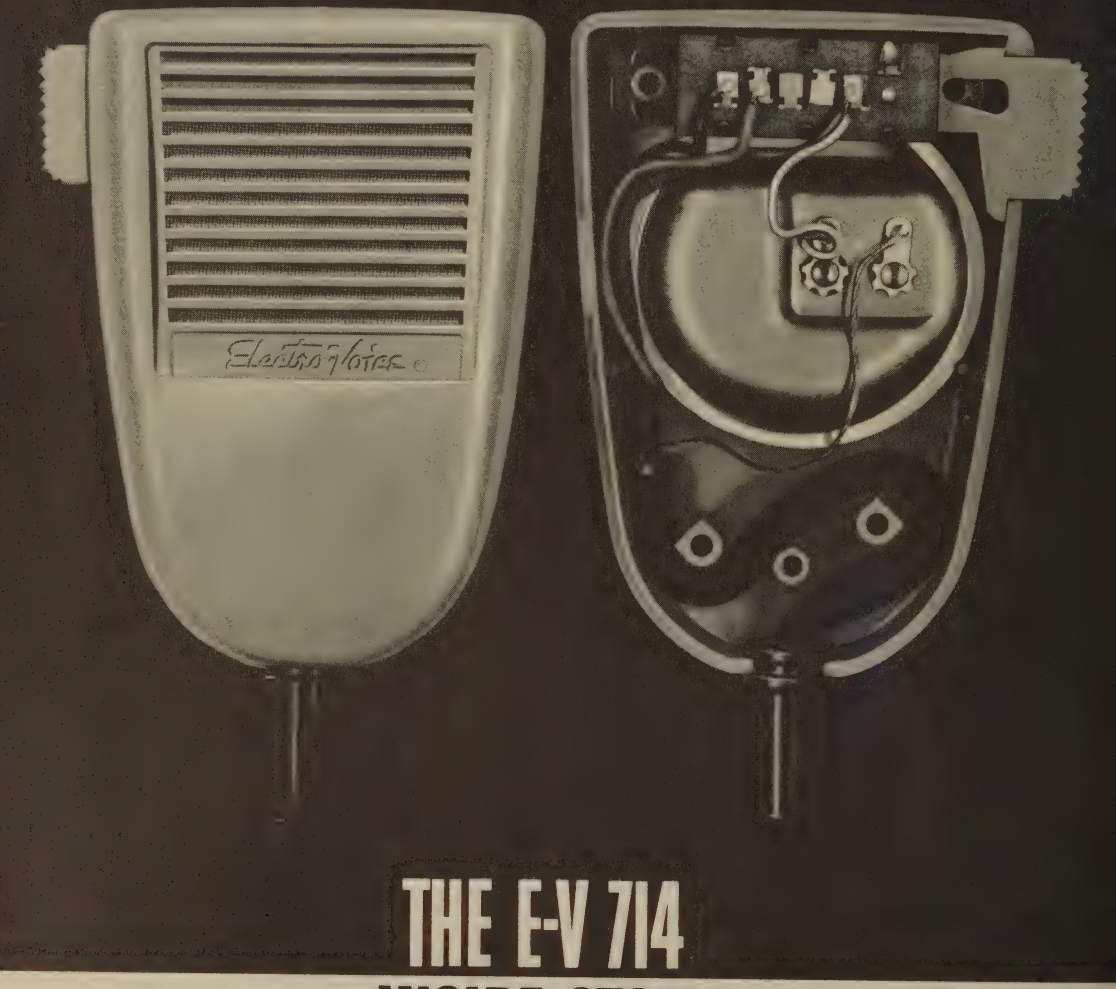

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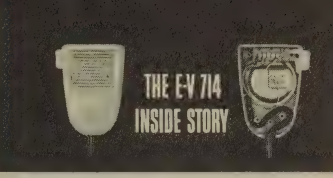


ARKANSAS
Little Rock—Carlton-Bates Company, 1210 East 6th St.

CALIFORNIA
Bellflower—Giant Electronics, 8535 Artesia Blvd.
Berkeley—Pacific Radio Supply, 2801 Shattuck
Burbank—Electronic City, Inc., 4001 West Burbank Blvd.
Garden Grove—Giant Electronics, 13225 Harbor Blvd.
Los Angeles—Radio Product Sales, Inc., 1501 S. Hill St.
Oakland—Brill Electronics, 610 East 10th Street
Orangevale—Strayer Electronics, 9353 Greenback Ln.
Sacramento—Zackit, 1020 14th Street
San Jose—Peninsula Electronic Supply, Inc., 656 S. 1st St.
Van Nuys—Valley Electronic Supply, 17647 Sherman

CONNECTICUT
Bridgeport—Hatry of Bridgeport, Inc., 2465 Main St.
Hartford—Hatry of Hartford, 100 High Street
New Haven—Hatry of New Haven, Inc., 36 Howe Street
New Haven—Radio Shack, Inc., 230 Crown Street
New London—Aikens Electronic Supplies, 531 Broad St.
Stamford—Radio Shack Corp., High Ridge Road
West Hartford—Radio Shack Corp., 39 South Main St.

FLORIDA
Jacksonville—Hoyt High Fidelity Center, 3582 St. Johns
Miami—East Coast Electronics, Inc., 1900 NW Miami Ct.
Miami—Electronic Wholesalers, Inc., 9390 NW 27th Av.
Miami—Walder Electronic Distributor, 1801 NE 2nd Av.
Sarasota—Hess Sound & Electronics, 1015 General Spaatz Blvd., Bradenton-Sarasota Airport
Tampa—Leader Elect. Dist. Inc., 3411 S. Dale Mabry
Winter Park—Martin Electronics, Inc., 1220 Orange Av.

ILLINOIS
Benton—Lampley Radio Company, 452 E. Church St.
Champaign—Electronic Parts Co., 905 Neil St., South
Champaign—York Radio & Television, 209 E. University
Chicago—Allied Radio Corp., 100 N. Western Ave.
Chicago—Allied Voice & Vision, 921 North Rush Street
Chicago—Evergreen Allied Hi Fi Inc., 2025 West 95th
Chicago—Lukko Sales Corp., 4900 N. Elston Ave.
Chicago—Newark Electronics Corp., 223 W. Madison
Chicago Heights—Heights Electronics, Inc., 1145 Halsted
Decatur—York Radio & Television, 518 E. Prairie St.
Evanston—Allied Hi Fi Stores, 602 Davis Street
Kankakee—York Radio & Television, 2222 E. Maple
Moline—Lofgren Distributing Co., 1202 Fourth Avenue
Oak Park—Allied Voice & Vision, 7055 W. North Ave.
Oak Park—Melvin Electronics, Inc., 541 W. Madison St.
Peoria—Klaus Radio & Electric Co., 403 East Lake
Rockford—J & M Radio & TV Supply, 1133 Railroad
Springfield—York Radio & Television, 350 N. Walnut

INDIANA
Kokomo—George's Electronic Supplies, 320 W. Superior
Marion—Mobile Radio Supply Co., 507 N. Washington

IOWA
Burlington—Union Supply Co., Inc., 231 South Third
Council Bluffs—World Radio Lab., 3415 W. Broadway
Davenport—TCR Distributors, 1205 E. River Drive
Des Moines—Mid-State Dist., Co., 1201 Grand Avenue
Des Moines—Radio Trade Supply Co., 1224 Grand Av.
Iowa City—Woodburn Sound Service, 218 East College
Sioux City—Molstad Distributing Co., Inc., 208 4th St.

KANSAS
Wichita—Radio Supply Co., 115 Laura

LOUISIANA
Alexandria—Central Radio Supply Co., Inc., 601 N. 3rd
Lafayette—Ralph's of Lafayette, Inc., 3004 Cameron
New Orleans—Radio Parts, 1112 Magazine Street

MAINE
Bangor—Radio Service Laboratory, 23-25 Palm Street
Portland—Commercial Distributors, 50 Diamond Street
Portland—Radio Service Laboratory, 1004 Congress St.

MASSACHUSETTS
Boston—DeMambro Radio, 1095 Commonwealth Ave.
Boston—Lafayette Radio Corp., 110 Federal Street
Boston—Radio Shack Corp., 167 Washington Street
Boston—Radio Shack Corp., 730 Commonwealth Ave.
Braintree—Radio Shack Corp., South Shore Plaza
Fall River—E. A. Ross and Company, 341 Columbia St.
Lawrence—Alco Electronics, 3 Wolcott Avenue
North Adams—Electronic Supply Center, 32 River Street
Randolph—Graham Radio Inc., 1105 North Main St.
Reading—Graham Radio Inc., 505 Main Street
Saugus—Radio Shack Corp., R.R. 1, NE Shopping Ctr.
Tewksbury—Caswell's Electronics, Main Street

MARYLAND
Salisbury—Standard Electronics, 301 Snow Hill Road

MICHIGAN
East Lansing—Tape Recording Ind., 1101 E. Grand River
Grand Rapids—Bursma Radio Supply, 870 Grandville
Grand Rapids—Radio Parts, Inc., 542 S. Division Avenue
Grand Rapids—Warren Radio Co., 24 Logan St., SW
Holland—Bursma Radio Supply, 491 Chicago Drive
Kalamazoo—Bursma Radio Supply Company
Kalamazoo—Warren Radio Co., 1710 S. Westnedge
Muskegon—Bursma Radio Supply, 773 Apple Street
Muskegon—Electronic Distributors, Inc., 1845 Peck St.

MISSISSIPPI
Jackson—Cabell Electric Company, 422 South Parish
Jackson—Swan Distributing Co., Inc., 342 N. Gallatin St.

MISSOURI
Kansas City—Burstein-Applebee Co., 1012 McGee St.
St. Louis—Interstate Ind. Electronics, 8406 Olive St. Rd.
St. Louis—Tom Brown Radio Co., 3924 Washington Blvd.
St. Louis—Van Sickle Radio-Electronics, 1113 Pine St.

NEW HAMPSHIRE
Concord—Evans Radio, Inc., P.O. Box 312
Manchester—Radio Service Lab., 670 Chestnut Street

NEW JERSEY
Little Silver—Coast Electronics Dist., Inc., 50 Birch Ave.
Mountainside—Federated Purchaser, Inc., 1021 US 22
New Brunswick—William Radio, 265 Woodbridge Ave.
Paramus—Lafayette Electronics Corp., 182 Route 17
Union City—Nidisco, Inc., 2812 Hudson Blvd.

NEW YORK
Albany—Seiden Sound, Inc., 335 Central Avenue
Flushing—Stuart Electronic Dist., Inc., 79-12 Parsons Blvd
Jamaica—Lafayette Radio, 165-08 Liberty Avenue
Kingston—Greylock Electronic Dist., Albany Ave. Ext.
Middletown—Certified Electronics, Wickham Ave., Ext.
New York—Airex Radio Corp., 85 Cortlandt Street
New York—Bruno-New York, Parts Div., 460 W. 34th
New York—Grand Central Radio, Inc., 124 E. 44th St.
New York—Harrison Radio Corp., 225 Greenwich St.
New York—Leonard Radio, Inc., 69 Cortland Street
Watertown—Watertown Electronics, Inc., 680 Mill St.

NORTH CAROLINA
Charlotte—World Electronics, Inc., 1415 S. Tryon St.
Greensboro—Southeastern Radio 404 N. Eugene St.
Raleigh—Southeastern Radio, 414 Hillsboro

OHIO
Akron—Olson Electronics, 69 West State
Cincinnati—Coston Radio & Television, 2345 Ferguson
Cincinnati—Holub and Hogg Co., 1400-02 Sycamore
Cleveland—Broadway Electric, 6207-09 Broadway, SE
Cleveland—Pioneer Electronic, 5403 Prospect Ave.
Cleveland—Superior Electronic Parts, 5708 Superior
Columbus—Hughes-Peters, Inc., 481 East 11th St.
Mansfield—Fox Radio Parts Co., 537 Park Avenue E.
Marion—Servex Electronic, 224 N. Prospect St.
Toledo—Lifetime Electronics, 1501-05 Adams St.
Warren—Valley Hi Fi Electronics, 497 W. Market St.
Washington, C. H.—Hutch & Son, 839 Columbus

OKLAHOMA
Tulsa—Radio, Inc., 1000 South Main Street

OREGON
Albany—Oregon Ham Sales, 410 West First Avenue

PENNSYLVANIA
Altoona—Altoona TV Supply Inc., 1720-22 Union Ave.
Erie—Warren Radio, Inc., 1313 Peach Street
Greensburg—General Electronic Dist., Inc., 210 Jamison
Kittanning—Barrons Radio Supply, Jct. 422 & 28 W.
Philadelphia—Almo Radio Co., 913 Arch Street
Philadelphia—Raymond Rosen & Co., Parkside at 51st.
Pittsburgh—Hall Radio Labs, 770 Washington Road
Pittsburgh—Radio Parts Co., Inc., 6401 Penn Avenue
Pittsburgh—Tydings Company, 933 Liberty Avenue
State College—Alvo Electronic Dist., Inc., 103 S. Pugh St.
Wilkes-Barre—Communication Eng. Corp., 41 Franklin

RHODE ISLAND
Cranston—Radio Shack Corp., 1301 Reservoir Ave.

SOUTH CAROLINA
Columbia—Dixie Radio Supply Co., Inc., 1628 Laurel St.

TENNESSEE
Memphis—Glenn Allen Company, Inc., 1148 Union Ave.

TEXAS
Dallas—Crabtree's Wholesale Electronics, 2608 Ross
Lubbock—R & R Electronic Supply Co., 1607 Ave. "G"
Texarkana—McCuloch Wholesale TV, 1222 Main St.

VERMONT
Bennington—North Radio Co., 124 N. Bennington Rd.
Burlington—Radio Service Laboratory, 703 Pine Street
Burlington—Vermont Appliance Co., 44 Lakeside Ave.
Rutland—Rutland Auto Supply Co., 138 State Street
White River Junction—Electronic Supply Inc.

VIRGINIA
Arlington—Key Electronics, 100 South Wayne Street
Danville—Womack Radio Supply Co., Inc., 513 Wilson
Hampton—Buckroe Electronics, Inc., 815 Buckroe Street
Norfolk—Radio Supply Co., Inc., 711 Granby St.
Roanoke—McKnight Electronics, 405 Shenandoah, NW

WASHINGTON
Kennewick—Columbia Electric, 406 North Fruitland
Spokane—Northwest Electronics, Inc., 730 E. 1st Ave.

WEST VIRGINIA
Wheeling—General Electronics Dist., Inc., 735 Main St.

WISCONSIN
Manitowoc—Manitowoc Electric, 1801 Marshall
Milwaukee—A & F Electro Mart, 1616 S. 81st Street
Milwaukee—Allied Radio, 5314 N. Port Washington Rd.
Milwaukee—Amateur Electronic, 3832 W. Lisbon Ave.
Milwaukee—Radio Parts Co., Inc., 1314 N. 7th St.
Sheboygan—J. J. Koepsell Co., S. 9th at Commerce
West Allis—Marsh Radio Supply Co., 6047 W. Beloit

TRANSCEIVER TROUBLE SHOOTING

— Part One —

"Roger, Unit 2, I'll take care of that as so . . ." and the transmitter goes dead.

Has this happened to you yet? If it hasn't, it probably will one of these days. Like all other complex equipment, CB radio transceivers are subject to troubles—and these troubles usually obey Murphy's law.

Murphy's law, in case you haven't heard of it, goes something like this: "If anything *can* go wrong, it will."

If you happen to live in a large city, equipment troubles can be taken care of rapidly (for a fee, that is) simply by calling the friendly service shop. But what can you do if you live far from a serviceman—or if you don't like the idea of paying that fee?

Fortunately, you *can* perform much of the maintenance on your equipment yourself, at home, with only the simplest of test equipment. Only two adjustments on any set require a 2nd-class license to perform—the rest may be done by anyone.

The two adjustments you *cannot* make are (1) any adjustment of the *oscillator* stage of the transmitter, and (2) any adjustment of the *output* stage of the transmitter *if the unit is connected to the antenna.* If the unit us connected to a dummy load instead of to the antenna, you *can* adjust the output stage.

Even with the rig connected to the antenna, though, you can legally make *any* adjustment on the receiver, *any* adjustment in the transmitter audio section, or *any* adjustment to the antenna itself—and these three areas account for a large percentage of service calls.

If you really want to go first class in doing your own maintenance, you'll need a modest amount of test equipment. Specifically, you'll need a vacuum-tube voltometer (VTVM), a tube tester, and a power-indicating dummy load (such as the Cesco Transicheck).

However, for minimum maintenance at home, the only real essential is a voltmeter. A VTVM is to be preferred, but an inexpensive volt-ohm-milliammeter (VOM) will do the trick most of the time. Such instruments are available for as little as $7.95, while VTVM prices (for kits) starts about $25. You can do your tube testing at the drugstore or supermarket with a slight loss in accuracy, and you *can* use a No. 47 pilot-lamp bulb (fitted with the proper connector at the base) as your power-indicating dummy load.

Maintenance actually divides into two broad classifications: these are *preventive* maintenance, which is for the purpose of catching trouble before it happens, and *corrective* maintenance,

You may have noticed a line on the entry card for our gigantic giveaway which asks "What article would you like to see in CBH?" Maybe you've wondered just what that line is for.

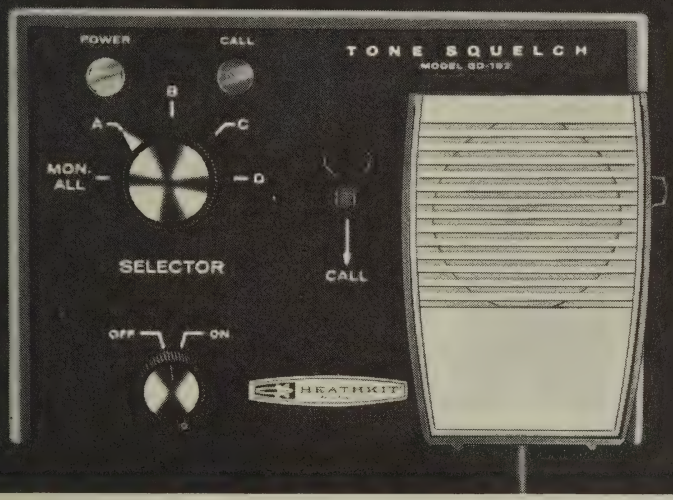
Here's your answer. We study that entry on every incoming card, to keep up with just exactly what YOU want to see in these pages.

This article covers the subject most requested last month; considering that all of you asked for articles on something like 65 different specific subjects, we found it amazing that more than 7 percent of you all wanted an article on do-it-yourself maintenance techniques!

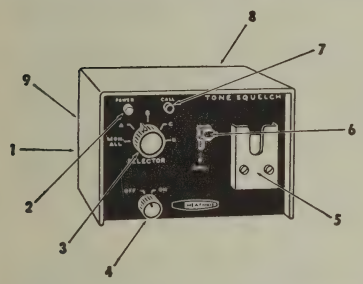
So here it is—the exact description of what you can and cannot do legally in the way of keeping your own gear up, and just how to do it. Keep telling us what you want—and we'll keep giving it to you!

ozzie

First new concept in citizen's band equipment in two years! . . . Heathkit 4-Position Selective-Call kit



an exclusive with Heath, this inexpensive unit converts your CB station from "party line" confusion to "private line" calling convenience



FEATURES
(1) squelch time-delay control, **(2)** power indicator, **(3)** tone selector switch (4 tones plus "monitor all" position), **(4)** tone squelch "defeat" switch for normal operation **(5)** "lift-to-operate" microphone bracket, **(6)** "call" lever **(7)** "call" indicator, **(8)** external alarm contacts to signal received call, **(9)** input and output level controls.

Here's welcome news for the serious user of Citizen's Band two-way radio. Heath's new Selective-Call Kit with tone squelch makes it possible for you to enjoy the calm of a CB station that is completely silent, yet ever alert for a personal call . . . makes it possible for you to call your choice of four specific units in your system at the touch of a button.

Using a unique new method, Heath's Selective-Call Kit features an *exclusive* 4-position rotary selected resonant-reed relay which responds only to calls transmitted by similarly equipped units using the same tone frequency. Upon receipt of the proper tone, your unit will automatically "come to life" permitting you to hear the call letters transmitted . . . you reply by merely lifting the microphone and acknowledging. At all other times, your station is peacefully quiet, allowing you to perform your job without one ear "cocked", for this unit does your listening for you.

To call another unit, just select the correct one of four tone frequencies, press the lever, and the called station will be waiting for you. Nothing could be simpler or more convenient. A "defeat" switch allows normal transceiver operation at any time. Equip all your CB units now with this economical new advance in communication ease . . . instructions included for installation with most popular CB transceivers using PTT.

Kit GD-162A (AC), no money down, $5 mo. **$33.95**; **Kit GD-162D (DC) $37.95**

GW-11 3-channel transceiver from **$69.95**

GW-12 Single channel all crystal controlled transceiver from **$39.95**

GW-31 Low Cost "Walkie-Talkie" from **$24.95**

GW-21 Superhet. "Walkie-Talkie" from **$44.95**

HEATHKIT by Daystrom

HEATH COMPANY

BENTON HARBOR 46, MICHIGAN

Ordering instructions: Fill out the order blank, include charges for parcel post according to weights shown. Express orders shipped delivery charges collect. All prices F. O. B. Benton Harbor, Mich. A 20% deposit is required on all C.O.D. orders. Prices subject to change without notice. Dealer and export prices slightly higher.

Enclosed is $_____; send_____

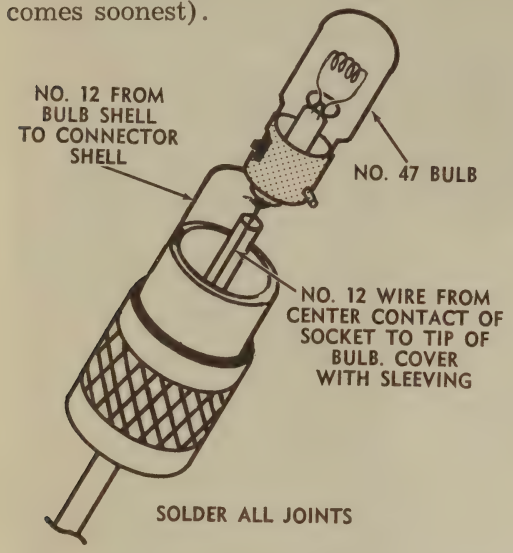
Name_____

Address_____

City_____ Zone_____ State_____

which is fixing trouble after it occurs.

For the average CB rig, preventive maintenance consists of four major items. These four things should be done at regular 30-day intervals, or every 50 hours of operation (whichever comes soonest).


NO. 12 FROM BULB SHELL TO CONNECTOR SHELL
NO. 47 BULB
NO. 12 WIRE FROM CENTER CONTACT OF SOCKET TO TIP OF BULB. COVER WITH SLEEVING
SOLDER ALL JOINTS

Number one on the list is the testing of all tubes. It's really best to keep a record on all the tubes in each set, listing the date the tube was installed, the date of each test, and the tube-tester reading at each test. Enter the tube-tester reading as the number to which the needle points, rather than as "good" or "bad", to get any benefit from the log. Then you can tell when the tube is about ready to give up and die.

This trick for forecasting tube failure is best explained by an example. Suppose you have a 6AQ5 power output tube. When first tested, it read "75" on the meter. At the next test, it read "72". Next time, the reading was still "72". For the next four or five tests, the reading stays between 70 and 75. However, at the last test the reading has dropped to "50." Even though the "50" reading is still well in the "Good" part of the scale, this tube is about ready to give up.

In other words, the key thing to look for in the tube test log is a *sudden* change in reading for the same tube, rather than the actual reading itself. Such a sudden change indicates the tube is near the end of its useful life.

Second item on the preventive-maintenance list is realignment of the receiver IF transformers and RF stages. This *must* be done whenever a tube is changed, and should be done at the same intervals as tube-testing to keep receiver sensitivity high.

Realignment is thought by many to be a tricky process; however, if you follow a standardized procedure it's as simple as one, two, three. The only essential equipment is an "alignment tool" which fits the tuning slugs of your receiver. This can be purchased at any wholesale parts house serving the servicing trade, and usually costs less than a dollar. Meters and signal generators help, but quite a passable alignment can be done by ear alone.

The starting point for realignment or alignment touchup is the last IF transformer. This is usually marked "T3" or "T4" on the tube location chart for your set. Insert the alignment tool and *slowly* turn the slug for maximum noise from the speaker. The volume control should be wide open and the set tuned to an unused channel. Most sets have two adjustments in each IF transformer; one is with the tool all the way in, the other with the tool barely inserted. Touch up these adjustments alternately, first one and then the other, until no more improvement is possible.

Then move one stage toward the antenna, to the IF transformer with the next lower number, and perform the same pair of adjustments here.

When the middle transformer is tuned, move to the first IF transformer and repeat the same two adjustments on it.

Now turn the volume down and tune to a channel in common use in your area. If you're lucky, you may find a weak signal. Tune it in for maximum signal strength, then touch up the adjustments of the RF amplifier stage (you'll have to check the schematic for your set to identify these) for the loudest possible signal. If your set has an S-meter, its reading can be used instead of trusting your ear; tune for highest reading.

In this process, be careful NOT to touch the oscillator tuning slugs. Ad-

(Continued—Page 41)

(Continued from Page 22)

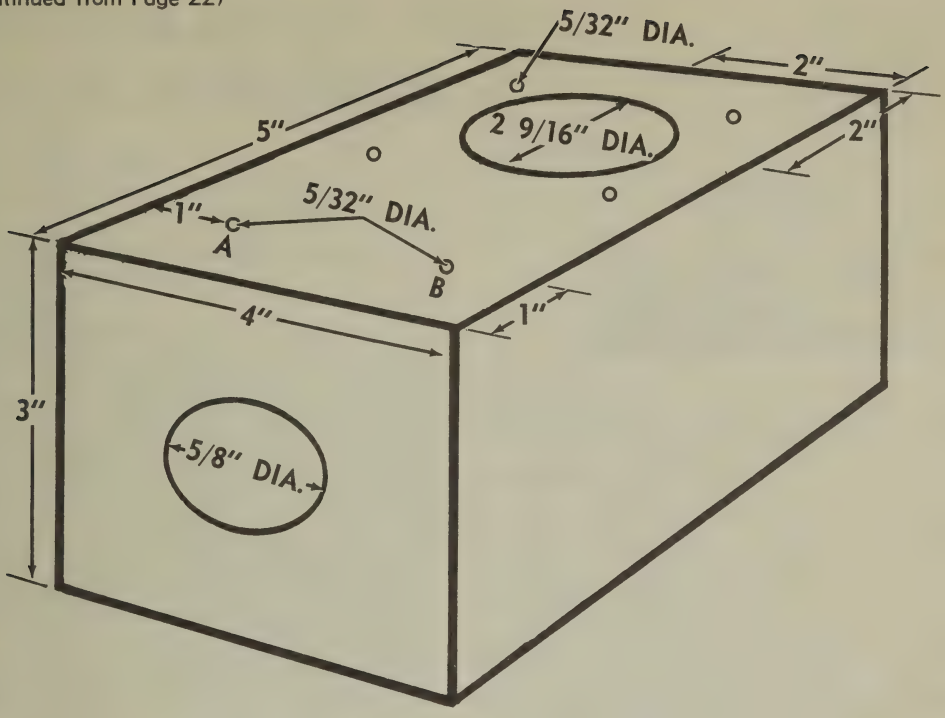


Figure 3

not to bend the pointer during this part of the operation. With the plate removed, attach your photocopy of Figure 4 to the old plate using rubber cement. Then replace the plate and reassemble the meter.

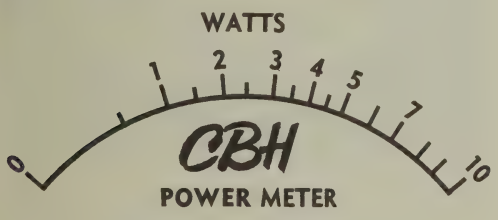
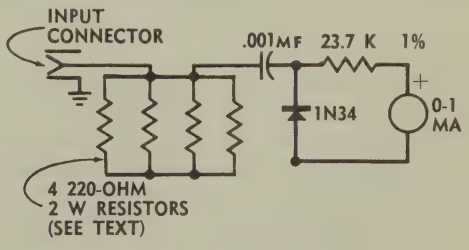


Figure 4

If you want to avoid all this, you can leave the meter alone and use the graph of Figure 5 to convert meter readings to watts. To do this, enter the graph at the bottom with the meter indication and go up until you reach the heavy line. Then go straight across to the left to find the output power in watts.

Either way, the next step is to mount the meter in its hole; all that remains is a simple bit of wiring.

Using copper braid stripped from a short chunk of RG/58 coax, connect the center terminal of the input connector to the ungrounded plate of the dummy load assembly. Also connect one lead of the .001 mf capacitor to this plate. The other lead of the capacitor goes to one terminal of the tie strip. From this same tie strip terminal,



Power Meter Schematic

connect one lead of the 23.7 K 1-percent resistor, and the cathode lead (from the end with W wide bar) of the 1N34 diode.

Connect the other lead of the diode to the metal case, and the other end of the resistor to the "+" terminal of

(Continued—Page 55)

CB in SOUTH AMERICA

by
Pedro Seidemann
YY5-PS279
Caracas, Venezuela

You're tuning across the band one summer evening and you hear a sharp carrier flop onto channel 15.

"Allo-allo, YY Cinco Pepe Pepe dos siete nuevo, combio-combio."

What would your first impression be? Just another Puerto Rican CB station you say? Perhaps you would guess it to be a South American ham using 11 meters (11 meters used to be a ham band you know, even here in the United States and Canada). Many nations of the world still use 11 meters for ham-band operation.

Chances are you would guess wrong, *unless* you said "There's a South American CB'er!"

CB in South America you exclaim! Where? Why? What rigs do they use? Are they like us?

The answers to these and many other questions will start here in CB Horizons soon, monthly, as Caracas, Venezuela CB'er *Pedro Seidemann, YY5-PS279* begins his reports to the CB'ers of "Norte Americano".

BIG-Very Big in S. A.

CB'er Pedro came to the attention of CB Horizons when he wrote some months ago "Please send me a copy of your magazine on CB radio. I recently overheard a CB'er in Denver, Colorado talking about it and I would like to see a copy."

From that request for a sample copy of CB Horizons came a flow of correspondence that culminated some weeks ago when Pedro Seidemann, YY5-PS279 agreed to establish a South American news and circulation bureau for CBH.

Pedro reports in his initial column. "CB radio is used mostly by private citizens who generally have one unit at home and one mobile unit in the car. Caracas is a city of frequent traffic jams, and there are also many areas of the city where telephone service doesn't exist. CB radio is very popular here and throughout many South American countries, including Argentina, Brazil, Costa Rica, Panama, Equador, Peru and Mexico.

"Power is limited to 5 watts, as in the United States but this is about

Pedro, YY5-PS279

the only regulation generally obeyed because to run more power would bring down complaints from other forms of two-way radio.

"Actually, we are allowed, in practice use of all 23 channels. Three exceptions are channels 5, 11 and 17 which are reserved for Government use. They are only occasionally heard in use however.

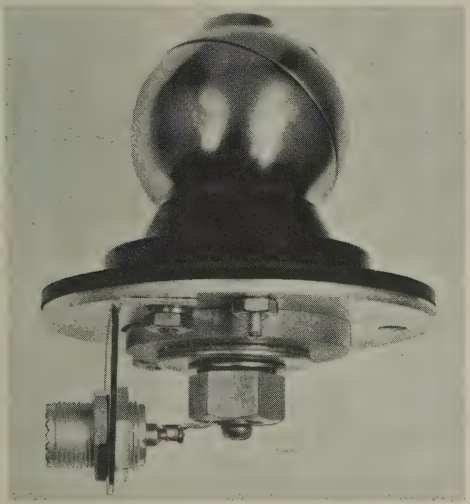
"Not too long ago a committee was formed among the 700 CB'ers here in Caracas to investigate establishing a

(Continued—Page 46)

Webster Manufacturing Company, 317 Roebling Road, South San Francisco, California chose the May Chicago Parts Show to show-off a new fixed station ½ wave antenna for base operation, and a new "Hole-in-One" antenna mount for mobile use.

The Webster VC-2 CB Antenna is a one half wave radiator instead of the usual quarter wave. This antenna requires neither ground plane nor screen. The radiator is fibreglass encased at the top and anodized aluminum at the bottom in a corrosion-resistant gold finish for the base station.

The new Webster "Hole-in-One" auto antenna mount needs only a single 1-1/16 inch hole in-



stead of the usual four holes. The H-210 mount, with heavy chrome-plated ball, is available immediately.

A new compression amplifier has recently been introduced by the Demco Electronics, Inc. of Bristol, Indiana. The Demco Power Modulator gives you "more than twice the talk-power", automatically regulated to 100% modulation, according to the manufacturer. A front panel IN and OUT switch allows bypassing of the compression amplifier for short range communications. Amplifier gain is regulated by the other front panel control. Installation is completely external in most sets with the unit being simply tied into the microphone line. All necessary hardware for the quick-and-easy hook-up is included. Dual power supply for either 12 VDC or 110 VAC adapts the Demco Power Modulator to both base station and mobile use. Complete details may be obtained from DEMCO ELECTRONICS, INC., RR No. 1, Bristol, Indiana.

NEW LITERATURE

Browning Laboratories, 100 Union Avenue, Laconia, New Hampshire has a new packet of reading material on their Model 23/S-Nine transmitter that will send you to the nearest mailbox with check in hand. Write to Arthur Winslow (Call him **Art** for short) and ask for the six page 2-color brochure.

Master Mobile Mounts, 4125 Jefferson Blvd., Los Angeles 16, California has a special deal for CB Horizons readers. Master Mobile has what may be the most complete line of auto body mounts, springs and mounting accessories available today. To show you what they have available, including a complete line of fixed station antennas (beams, ground planes—you name it) and a line of mobile whips, Master Mobile asks that you direct a postcard or letter to the attention of Mr. S. Perlstein, Sales Manager. Tell him you want the great antenna catalogue you read about in CB Horizons.

The CBH Lab Reports . . .

WE TEST

- ★ **KELTNER PART 15 UNIT**
- ★ **GUT-R-MOUNT**
- ★ **AUTO-PATCH**

KELTNER HT-2 HAND HELD TRANSCEIVER

Mention hand-held transceiver (you can't call them walkie talkies anymore, Motorola has a patent on this phrase, and you can't call them handie-talkies because Lafayette has this phrase under patent) and most of us immediately think of a factory in Japan presided over by a war-lord type fellow cracking the whip above a production line manned by kimono clad Japanese girls.

Tain't so, McGee. At least not in Englewood, Colorado. Up in the Colorado Rockies, Keltner Electronics (1045 W. Hampden) is producing one of the smallest hand-held transceivers you will find in or out of Japan. Four transistors are housed in a case slightly larger than the mythical pack of cigarettes. The tough hard plastic case houses reliable communications from .5 to 1 mile even in obstructed downtown traffic and tall buildings. The unit is single channel, with the speaker doubling as a microphone on transmit. Despite the simplicity of the circuit, the HT-2 shows amazing sensitivity. Investigating we found a double tuned input circuit in the receiver and matched loading in the final output from the transistor final. No attempt was made to measure the output of the transmitter, but it would appear to be 40-50 milliwatts. The telescoping antenna proved an effective method of cutting down overload when working

two hand-held units close together. Simply telescope the rod down a short distance and thereby decouple the antenna from the receiver and transmitter circuits.

A single inexpensive mercury cell powers the unit, and as noted earlier, its exceedingly small size makes up for some other disadvantages such as lack of 100 mw output and more advanced circuitry.

Price per unit is $59.95 from the manufacturer or through a number of newly established dealers. For the handiest of 'secret Part 15 communications,' the HT-2 is recommended by the CBH lab crew.

GUT-R-MOUNT

For several months now you may have noticed an ad somewhere in here about a device called a "GUT-R-MOUNT" and you may have wondered just what it is.

So did we—so we tested it.

This gadget is an ingenious spring-loaded pivoting affair designed to hold an antenna in the highly-desirable rooftop position, without marring the outside of the auto, and at the same time allows the antenna to fold down so you can get the car in the garage.

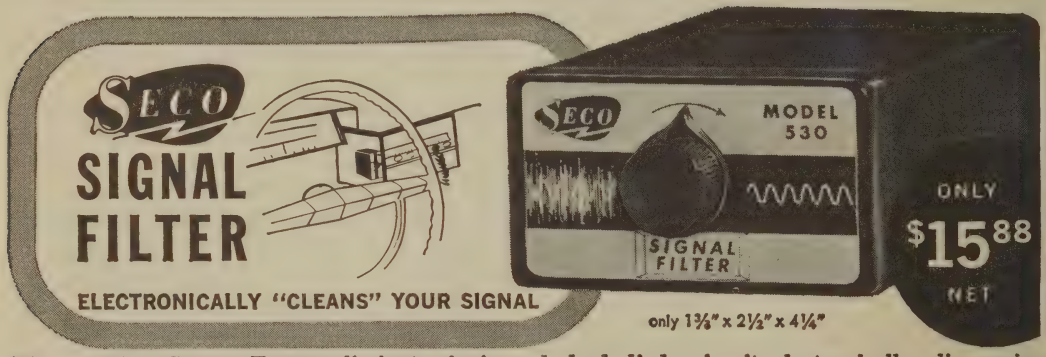
If you've tried much mobile work, you have probably already found out that any antenna put on top of the car outperforms any antenna mounted on the rear bumper—and this is the great advantage of the Gut-R-Mount.

With it, you can put most anything —even a 9-foot whip if you like—up in that excellent rooftop position, and still fold the antenna back (it takes about 4 seconds) for parking, low trees, etc.

The Gut-R-Mount is sturdy, and by its spring-loaded positive-detent design can't let the antenna fold down accidentally even at 70 MPH down the freeway. The only fault we could find is the $9.95 price—it seems way too low for such a useful gadget!

THE AUTO-PATCH

Not too far back, we printed an article on building your own "phone patch." Now, the fellow who wrote that article is marketing a similar unit —the Stoner "Auto-Patch".



The new Seco SIGNAL FILTER eliminates ignition equipment interference, steep wave front "hash" and background noise. It's the smallest, most rugged noise limiter and controllable squelch on the market. A dual high mu triode and dual diode circuit electronically clips noise pulses out of your signal.

- Increases reception range—in many cases up to several times.
- Produces effective quieting operation without audio distortion—even on very weak signals.
- Filters out noises from your own and passing vehicles without costly suppression installations.
- Make listening easier—increased intelligibility reduces fatigue.
- Defies vibration, shock, dust and dirt—encapsulated electronic circuit assembly.
- Adapts to most CB transceivers using tubes—all AM superheterodyne receivers with 6 or 12 volts AC or DC and 150 volts "B" power supply —mobile as well as base stations.

Simple installation instructions with easy-to-follow two-color schematics included with eaoh SIGNAL FILTER.

See your electronic supply dealer—or if he doesn't have the Signal Filter, send in the coupon below.

SECO ELECTRONICS, INC.
1207 S. Clover Drive, Minneapolis 20, Minn.
Please send (Qty) _____ SIGNAL FILTERS postpaid
☐ check ☐ money order for $_____ ($15.88 ea.) is enclosed.
PRINT
NAME_____
ADDRESS_____
CITY_____ STATE_____

We tried one out, and it does everything claimed for it. All you do is hook the Auto-Patch to your telephone lines as described in the printed instructions, and connect its two phono-connector jacks to the mike connector and speaker of your transceiver—also as described.

Then, your transceiver extends the phone lines right on out to your car, boat, airplane, or what have you.

The instructions Don supplies with the patch are clear and complete—the only tricky thing is knowing how to keep the volume set right. The best way to do this is to call a buddy on the air and another on the landline, and adjust the patch's volume control until the radio voice is just a little bit softer than your own, through the telephone. This will insure that you don't feed too much signal to the phone lines and cause complaints.

In case you hadn't guessed—we like it!

TROUBLE SHOOTING (Continued from Page 34)

justment of these can throw your dial calibration so far off you won't even know which way you went out of the band!

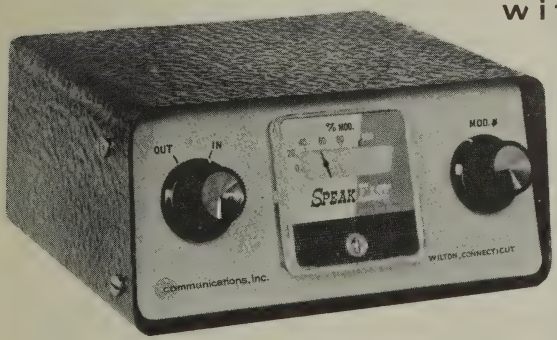
The third preventive-maintenance item consists of coating all switch contacts with "Lubriplate" or similar switch-contact preservative, to prevent corrosion and arcing. At the same time, apply "Quietrol" or a similar volume-control cleaner to the volume and squelch controls. Full directions for applying these chemicals are printed on the containers they come in.

The fourth and final item on the preventive-maintenance check list applies only to those sets with crystal-controlled receiving channels. On these, the crystal frequency trimmer (present on some sets but not on all) should be adjusted for center-channel tuning. This adjustment is made in the same way that the RF stage is aligned, using a weak on-channel signal, except that

(Continued—Page 45)

CB'ers/Amateurs . . . speak further

with SPEAKEASY !



AUDIO COMPRESSOR AMPLIFIER

$34.75

Increases copying range
Boosts total average modulation
Improves audio quality
Cuts through QRM/QRN
Fits all popular CB sets
Installs mobile or base

write for specific data sheet.

communications, inc. 33 Danbury Road
Wilton, Connecticut

CITIZENS COMMUNICATIONS

CALLING ALL ACTIVE CB'ERS

Citizens Communications Reports is a space set aside each month by CBH for the exclusive use of local and regional CB'ers around the nation. In each of the 24 call districts CB'ers are appointed to serve as "CCM's" or "ACCM's". These appointed CB'ers are reporters for CBH, gathering news from CB clubs and activities in their regions. Make it a point to bring up the matter of representing your club's activities with a monthly club report to your CCM or ACCM, at your next club meeting.

If you don't see news from your CALL-DISTRICT or locale in print, drop JOHN F. KREJC, 2W4586, 40 LANZA AVE., GARFIELD, NEW JERSEY, COMMUNICATIONS COORDINATOR, a line and apply for an CCM or ACCM appointment to your district.

Areas still open, 7th Call Area, 12th Call Area, 13th Call Area, 16th Call Area, 21st Call Area and 23-24.

New appointments this month include Fern Fechner, 14Q1295 of Cashere, Wash. ACCM., Gary Goss Hiller, Pa., ACCM., 20th Call Area. The 19th Call Area has been divided into Northern and Southern divisions, because of the vast area it covers. The CCM for Southern division is Donald J. Cuker, 19W8972, 24600 Joy Road 75N, Detroit 39, Michigan. All clubs in the Southern area are urged to contact Don.

WHAT'S GOING ON

The 1962 Annual Tri-State Pony Jamboree will be held August 9, 10, 11 at the National Horse Grounds, Tonawanda, New York. For full details contact Barb Urban, 20Q0619, 209 Fletcher St., Tonawanda, N. Y.

FIRST CALL AREA: Seth B. Paull, 701 Hope St., Bristol, R. I.

Nantucket Island CB Club president Jack Gardner, 1Q2148. The club had a CD drill on April 23rd when the object was to locate an automobile somewhere within the Nantucket city limits.

The Norwald Citizens Band Ass'n held its Second Annual Giant Eye Ball QSO, on June 17 at Cove Marina on Calf Pasture Road, East Norwalk, Conn., which was a success.

Ronnie Balogh, 1W8788 recently saw a rowboat with two fishermen capsize. Ronnie and his CB equipment were instrumental in getting police to make the rescue saving two lives.

Naragansett Bay Citizens Band Radio Club with president Francis Turano—1W5389, monitors channel 11 and their emergency channel is 1.

The Waterville Area CB'ers held their meeting at the Depositor's Trust Company Club room in Winslow. President—Richard Willette, 1Q5141.

SECOND CALL AREA: CCM Donald Lehr, 2W3911, 39 West Blvd., East Rockaway, N. Y. ACCM—John F. Krejc, 2W4586.

Bert Endress, 2W9623, State of New Jersey Governor Of MCEU, Pres. of North Jersey Chapter of MCEU, announces 3 new chapters being added to the North Jersey area. North Jersey and Bergen County Chapters are forming bowling teams under the direction of Stan Horowitz, 2W2478.

In Dumont, its The North Jersey C.B. Club. Pres. is Nat Brussel, 2Q2903.

Bergen County Chapter of MCEU, Pres. Mel Londner, 2Q3150.

Late Flash—Warren Strydio, 2Q6423, new Pres. of Wayne Chapter of The National 11 Meter League, Inc.

The recent jamboree held in Bethpage, L. I. by The Nassau CB Club was a huge success for all involved in this project. This was the club's second annual affair and involved one heck of a lot of work for the jamboree committee and the rest of the club members. Present were CB'ers from all over New York, New Jersey, Conn., Pa., and even CBH roving reporter Gar Green from Laconia, N. H. Nassau CB Pres. Len Pottruck, 2W3048, and the many busy members of this active club should be congratulated for the effort put forth to promote this affair. The end result of the jamboree was a whole new association of friends and neighbors who attend these get-togethers and help to further the comradeship of CB to those who know little of its actual operation.

During the jamboree many valuable prizes were given to visitors. Prizes were mikes, test equipment, various parts, a full CB set and many others. A really successful affair.

The following report is from the ACCM from the First area while on vacation in the Second area. The Bay Shore Radio Club News, N. J. South shore club channels are 13-14. Pres. is Howard P. Wilson, 2Q1596, with 109 members. 2Q5282, Donald Homan was given a surprise party before leaving for Texas. This was planned by Art Kneller, 2Q4712. Herb Newhouse came to the rescue of a fellow club member 2Q5760, Stanley Sliwz, a disabled vet, with a flat tire at the Monmouth County Airport. Area Monitoring channels are 9 and 11.

Any other clubs in the two areas who are not getting any mention here, remember this column is for you as well as your neighbors. If you have any news, drop a line to John Krejc or myself at the above address. We will make it our business to make you known.

THIRD CALL AREA: CCM Chester Zubrzycki, 2724 W. Third Avenue, Chester, Pa. ACCM's Pending.

Looking to hear more from the Lycoming CB Radio Club & Pres. Bob Shearer.

The Delaware CB Association, oldest of CB groups in the Delaware River Valley was organized in 1959. Its motto is—**Service Thru Unity.** Close cooperation with federal, state, local and civic groups are continually maintained. Pres. is Bob Bryant, 3Q0804. Monthly meetings are held the last Thurs. of each month at the Officers Club, New Castle County Air Base, Wilmington, Route 13, Delaware.

SIXTH CALL AREA: CCM Don W. Sanford, 6Q3944, Box 304, Northport, Alabama; ACCM—Ken Chambliss, 6Q4462.

The Dale Hollow Citizens Radio Club, named after one of the largest lakes in the area with headquarters in Byrdstown, Tenn., Glenn Poore, Pres.

Central Savannah River Radio Club, located in Evans, Georgia, doing CB and CD work.

Letter from the Channel Eleven "Tube Popers", of Royston, Ga., advises that Terrell D. Craven is prexy, Roy Wilburn veep, with Harrison Barton serving as secretary-treasurer. Their communications director is Buel Rice. The club boasts of 11 members and having its growing pains.

The CB Club at Decatur, Alabama got off to a flying start last month. They met March 29 at the City Hall and adopted their constitution. Your CCM had the pleasure of being their guest, along with Thomas

(Continued—Page 44)

***Executive Coordinator, John Krejc, 2W4586, 40 Lanza Ave., Garfield New Jersey.**

10 CODE CONFUSION

by

PAT DELVIN, 10W3088
STILLWATER, OKLAHOMA

The problem of a wide variety of 10-codes and 11-codes has been a thorn in the side of C.B. communicators since its origination.

As it is now with several sets of codes in existence, should an emergency arise, and some one calls 10-24 he may get help or he may wind up with directions to the nearest rest room. It is obvious that C.B. needs a standard 10-code. It could mean the difference between life and death.

The code outlined here is almost identical to that used by police departments across the nation. They, long ago, recognized the need for a common "language" to speed traffic. Obviously C.B. would have no use for some of the 10 signals used by the police departments so these may be left open for special C.B. messages such as "where is a good motel," etc. But it is our purpose here only to standardize those signals which can be applied to C.B. and help speed communications.

The following list along with a brief explanation of their uses:

- **10-1** Receiving Poorly (copy so poor that message can't be understood)
- **10-2** Receiving Well (This may be accompanied by a "s" meter reading if available)
- **10-4** OK, Affirmative, Yes
- **10-5** Relay (used when one station needs the assistance of an intermediate station to get the message through. Also, the assistance of a 3rd party may be enlisted to take a message)
- **10-6** Busy (operator is unable to talk at this time)
- **10-7** Out of Service (used when a unit is turning off the equipment)
- **10-8** In Service (given when a unit is turned on)
- **10-9** Repeat (used when message was not understood for some reason)
- **10-10** Through with channel—subject to call (means about the same as clear)
- **10-12** Visitors or officials present (Business concerns use this to mean "the boss is here")
- **10-13** Request road and weather information (used when a unit is in strange territory and needs directions, road condition, or weather forecasts)
- **10-19** Come by this station (used when the base unit wants a mobil to report in)
- **10-20** Location
- **10-21** Call by telephone (usually followed by a phone number)
- **10-22** Disregard (forget it, never mind)
- **10-23** Stand by
- **10-24** HELP (used only in actual emergency when the unit is in danger or needs help)
- **10-30** Contrary to rules and regulations (used when someone is violating a rule or F.C.C. law)
- **10-33** Emergency traffic (used when a unit needs an ambulance or police)
- **10-35** Confidential information (this traffic cannot be transmitted over the air)
- **10-36** Correct time
- **10-37** Identify yourself (by name and F.C.C. call)
- **10-41** Change to channel ___ (used to clear the calling channel or avoid cross channeling)
- **10-50** No calls or messages for you (answer to 10-69)
- **10-69** Have I had any calls? (used when a unit has been out of service for awhile)
- **10-97** I have arrived at my destination
- **10-98** Finished with assignment (used when a unit is through with a mission or service call)

As is obvious there are many unused 10 signals which can be adapted to local meanings. A good example of this is the code 10-45, 10-46 which mean "out for coffee" and "out for a meal." These are commonly used in Northeastern Oklahoma.

There are some other police signals which would be helpful for C.B'ers to know also, such as signal 11, how are my signals?, which is answered by 10-1 or 10-2.

This 10 code is crisp and clearly understood even under noisy conditions. I believe it is the solution to all of our code confusion.

10-7

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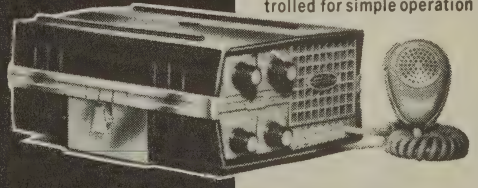

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INCREASE FIELD STRENGTH 50%

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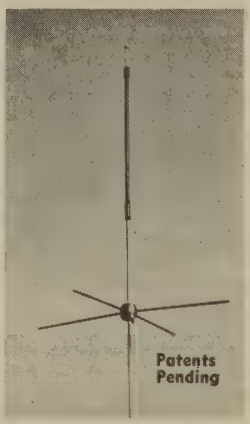

This remarkable new attachment for CB mobile antennas is **guaranteed by the manufacturer to increase relative field strength by 50-100 percent** (model MP-1 or **"in excess of 100 percent with the MP-6."** CBH lab tests on the MP-1 showed an 85% increase in relative field strength.)
Make your mobile unit the loudest on the band! Hear more stations, work greater mobile to mobile distance! This easily installed capacity hat requires no cutting or trimming. Use field strength meter to position, and then lock down the holding screws. Slips over existing whip, complete instructions provided. Available to fit all 102-inch whips, top loaded whips, or with adapter sleeves for fiberglas and small diameter non-standard whips. Available with blue or black anodized aluminum hub (model MP-1) or nickel plated hub (model MP-6).

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Weaver, 6Q1722, and Bruce Dunn, KDB0748/2, also from Tuscaloosa. We expected to have the names of their officers by this time, but so far, we haven't. The Marshall County Club at Guntersville is now active, but no word on officers or activities. More on these two clubs next issue.

The Tuscaloosa County Chapter of REACT, Radio Emergency Citizens Teams, is really rolling in the Tuscaloosa area. So far they have assisted in a drowning, forest fire, lost child, and are training now with the Fire and Police Departments.

REACT monitors Channel 11 on a 24 hour a day basis, and has signs on all highways to that effect. The Black Warrior CB club located in Tuscaloosa.

EIGHTH CALL AREA. CCM Ralph M. Lord, 8W1494, 4834 Crown Avenue, Baton Rouge, La.

Harold and Pauline Olive, along with this reporter, are interested in holding a state CB convention in the near future. If you are interested and would attend such a meeting, drop me a line at the address heading up this column. Come on all you clubs and put Ralph on your mailing list. This is for your benefit.

NINTH CALL AREA: CCM John Hudson, 9Q0026, 235 Englewood, San Antonio, Texas.

The club Lucy and Richard Suter organized in Houston is now going strong. It is called the Eleven Meter CB'ers Social Club. Pres. is Chuck Farmer, 9W-2279, Vice Pres., Al Pruett, 9W0769, Sec., Betty Pettis, KED0267. They have 31 paid up families as members.

Greater Dallas Citizens Band Club, Pres. Dick Johnston, boasts a membership of over 250. The group monitors ch. 11.

TENTH CALL AREA: CCM—Bob Johnson, 10W4389, 4300 Rector Ave., Fort Worth, Texas. ACCM—James Abney, Jr., 10Q2516.

Midstate Minutemen, aided and were praised by the F.A.A., when they directed the Air Show held in Stillwater, Okla. Weather watch in Tornado Alley is ch. 15. Pres. of the group is Ken Smith, 10Q2629. The Caddo CB Club of Marshall, Texas will hold its Bar-B-Que, July 29th. Cost will be $1.00 per head and $.50 for kiddies. Lots of free prizes and eats. If you are in the area, why not plan to attend. I would like to thank all of the CB clubs and 10th area CB'ers for their fine reports. Keep-em coming.

SEVENTEENTH CALL AREA: CCM Lawrence J. Woods, 17W5910, 1735 Michigan Dr., Evansdale, Iowa; ACCM—Pete Davis, 17Q2669, Jim Laversee, 17W3361.

Citizens radio club of Wichita, Kansas, Pres. Harold J. Tanquary.

The Tri-State area of Missouri, Okla., and Kansas have combined and observed their 2nd anniversary in Feb. Club activities with the Civil Defense in Joplin, Mo. with their own license, 17W4300, with a base station in CD. Hdqs., plus a mobile unit which ties in ham, police, hi-way patrol, sheriff dept. as well as CB. This group has taken First Aid courses so they will be ready to help in any emergency. Area ch. are 9, 11 and 22.

EIGHTEENTH CALL AREA: CCM—Ralph E. Combs, 18B1711, 202 Bolivar St., Owensboro, Ky. ACCM'S—Bob D. Cooper, 18A7297, Anna Hitchcock, 18W7805, Thomas F. Gillians, 18A1868.

Milwaukee Citizens Radio Club of Wisconsin, Prexy George Rehse, 18W4380.

The CB Pioneers Radio Club Inc. has set up a monitoring project in Elkhart. The club monitors for violators of Part 19. The Pioneers had their "Spring-Spree" on May 20th. Any club that would like to exchange news, they may do so by writing to The C.B. Pioneers, P.O. Box 113 Dept. N, Elkhart, Indiana.

The Mich-iana C-B'ers are printing their own news, if you are interested in receiving a copy, write to Michiana C-B'ers, 230 Service Ct., South Bend, Indiana.

The Kentucky & Indiana Citizens Band Radio League, held its meeting at the Rudd Coffee Shop with 63 members present. The club now has 119 members and growing. A number of its members attended the Perry County CB club meeting and offered its help. The club prints its KICB news, and copy will be sent on request to any club. Address mail to Ralph E. Combs CCM 18th Area.

NINETEENTH CALL AREA: CCM Carl Wesser, Jr., 19W-6285, P.O. Box 'V', Presque Isle, Michigan.

The 11 O-M Club of Toledo, Ohio, had their first annual "Recognition-Appreciation and Installation of New Officers" Rally. This rally was a 'friendship' sort of party—planned as an informal pot-luck picnic supper—with every C-B'er in the area invited.

TWENTIETH CALL AREA: CCM—Jack Marshall, Box 260, RD #1, Canastota, N. Y., ACCM—Gary Goss, KIC1572.

The Niagara Frontier Citizens Band Club, located

at 209 Fletcher St., Tonawanda, N. Y., boasts a membership of 200. Pres. of the group is Paul Urban, 20W5056. Monitoring channel 22. Editor of their club newspaper is David Essrow, 20Q0619.

Thanks, to all the CB'ers in the Sunbury, Penna. area for their assistance in locating the stolen car of the Cambbell's, 20Q2881. Fine job. Sunbury officials commended the work of the Citizens Band Network, which consisted of 40 units. The Sullivan Trail Chapter of MCEU of Elmira, N. Y. held its regular meeting May, 15. A Certificate of Completion was presented to the members who took the course in Radiological. A Red Cross First Aid course is open to all members at the Red Cross Chapter House, on Wednesdays at 7:30 pm.

Congratulations to those operators who set up the emergency alert on May 1st channel 2. The weather reports coming in were not so good, and an all out stand-by alert was an excellent idea. It goes to show how the CB'ers could work if needed.

TROUBLE SHOOTING (Continued from Page 41)

you adjust the crystal trimmer rather than the RF tuning slug.

Be careful, when you do this, that you don't adjust the transmitter crystal trimmer by mistake. Adjustment of the transmitter crystal trimmer will throw you off-frequency—and off-frequency operation is the greatest single cause of FCC citations!

In the transmitter, the only preventive maintenance you should attempt is regular testing of the tubes and tuning

(Continued—Page 47)

GEODE INDUSTRIES KHA 2436
Your CB HEADQUARTERS

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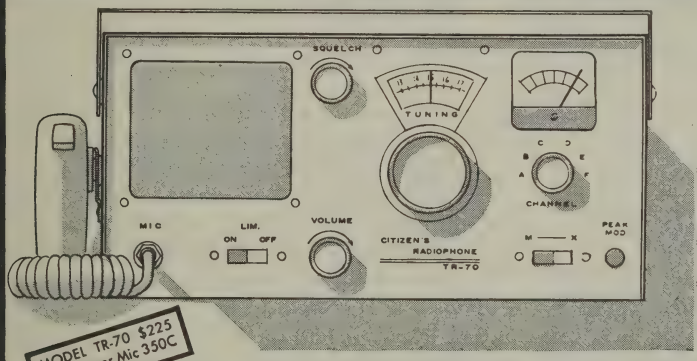

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THE **"AUDIO-RAM"**
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- It's a Compressor
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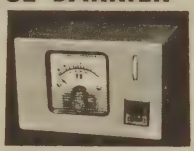

The Ram that drives your signal home. Be "top dog" on your channel!

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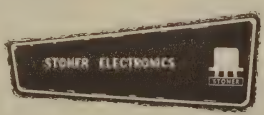


Box 7388 Alta Loma, Calif.

CB IN SOUTH AMERICA

(Continued from Page 36)

club. The committee recommended that instead of forming a separate club right away, we should join the local 'hams' as a branch of their club. This will be called the "11 Meter Section of the Venezuelan Radio Club". A calling channel has been set up for emergency calls. This is channel 4.

"In our country YY stands for Venezuela, 5 for Caracas, The *PS* in my call are my initials. 279 is my 'serial number'. Base and mobile units have separate numbers, so I also hold the call letters YY5-PS278. This will probably be changed by new regulations as we have asked for call letters similar to those used by U.S. CB'ers.

Pedro's CBL Card

"Speaking of change, our Ministry of Communications is studying "Communicaciones Personales" (as CB radio is officially known here) with an eye towards establishing some enforcement measures. The Venezuelan Radio Club (the amateur group) has asked that we have greater controls. The present rules are so strict that if they were followed closely, we could not use our radios at all. But the rules have no enforcement provisions so we are able to use them to good advantage, presently. Incidentally, private businesses cannot use "Communicaciones Personales" as it is limited to *personal* use only. Businesses must use FM two-way radio, operating in the VHF range.

"U.S. stations come in very loud sometimes. I have collected CBL cards

from Colorado, California, Rhode Island, New Jersey, Massachusetts and Iowa.

"There are only a few types of equipment available here. Johnson gear is very popular, and others in use include Eico, Heathkit, RCA and Lafayette. There are many Japanese walkie-talkies here too.

"Ground plane antennas are popular at base stations, whips on mobiles.

"I use a Heathkit GW10 and ground plane antenna. I have a whip on my car and change the GW10 from car to base as many American CB'ers do. There are becoming so many CB'ers in Caracas that some people think we belong to police! Our big whips on our cars apparently have many people wondering what it is all about!

"Everyday dozens of new stations come on the air. CB radio is very popular here, and the fact that we talk to Costa Rica, Argentina and other countries so frequently apparently is attracting more interest."

So goes the first report from Caracas CB'er Pedro Seidemann, YY5-PS279.

10-7

TROUBLE SHOOTING (Continued from Page 45)

of the transmitter output into a dummy load.

Tubes should be tested in the same manner described for receiver tubes. To tune the transmitter output, connect the dummy load and adjust the transmitter output-stage controls (check the schematic to identify them) for maximum output. If your unit is properly designed, it will be impossible to adjust for illegal operation through this procedure.

However, just to be safe, you should measure the plate voltage applied to the RF output tube, and the total current drawn by this tube after adjustment. Multiply the voltage by the current in milliamperes, divide by 1000, and check the result. It's your power input in watts. If it's less than 5.0, you're legal. If it's less than 4.0, you still have troubles—but they're of such a nature that you should consult a licensed technician!

(Continued—Page 56)

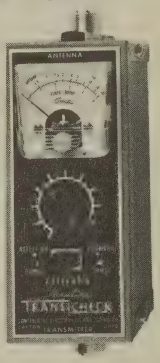
NOW YOU CAN LEAVE THE

Cesco Thruline TRANSICHECK

Model CB-52-T

IN LINE CONTINUOUSLY WITHOUT POWER LOSS!

The new Thruline Transicheck is a patented development by CESCO employing a miniature coaxial cylindrical unit utilizing mutual inductance and capacity coupling between linear conductors for conducting tests on Citizen Band transceivers operating in the 26 and 27 mc. Bands.



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CBH RAFFLE REPORT

Our Raffle department has been negligent of late in reporting to our readers who the lucky CB'ers have been in the past three Giveaways.

So here we go. First we go back to February winners.

FIRST PRIZE: *CB Dream Station #1 (Polycomm II-G, Elenco Power Gainer, Antenna Specialists Magnum-27, Lafayette Phone Patch)*—Tommy J. Carson (CB call pending), Little Rock, Ark.

SECOND PRIZE: *Turner 350C mike*—Ron Brewer, 19Q5360, Hamilton, Ohio.

THIRD PRIZE: #1: *Antenna Specialists M-74 antenna*—Roy Steele, 15W 0572, Arvada, Colo.

THIRD PRIZE #2: *Vanguard RF Amplifier*—John P. Arata, 1Q4565, Winthrop, Me.

THIRD PRIZE #3: *Holstrom SK-3 Preselector*—Stanley Colligan, 16Q24-21, Wild Rose, Wisc.

FOURTH PRIZE #1: *OZCO "Snoozer"* squelch—H. Wanczyk, 1W9997, Glastonbury, Conn.

FOURTH PRIZE #2: 100 *CBL cards*—Bert Quillen, 14W1003, Kennewick, Wash.

FOURTH PRIZES #3: 5 CB *log books from Elanem Co.*

1. Joe G. Moseley, 18QA1658, La Center, Ky.
2. Earl C. Manier, 18Q8610, Ft. Wayne, Ind.
3. David F. Orr, 6Q4257, Birmingham, Ala.
4. Charles F. Byrum, 7W3356, Boynton Beach, Fla.
5. C. Robert Pedersen, 17W0789, Cedar Falls, Iowa.

In the March issues giveaway we had an Indiana man coming out with the first prize.

FIRST PRIZE: Knightkit C-27 transceiver—Clarence M. Alsman, 18Q9440, Indianapolis, Indiana.

SECOND PRIZE: Lafayette TM-58 SWR bridge and meter—Tohn H. Wallis, KFC 0262, Stockton, California.

THIRD PRIZE: Turner 350C mike—Thurman E. Anderson, KCI0063, Kinston, N. C.

THIRD PRIZE #2: Bainbridge Dual Conversion Adaptor—Ron Coles, KHA-1054, Lindenhurst, Illinois.

THIRD PRIZE #3: Vanguard RF preamplifier—Allen B. Clark, 5W2109, Clifton Forge, Virginia.

FOURTH PRIZES:

(1) Ozco Snoozer—Herman Harsey, 7Q1127
(2) Cesco Generator Filter—V. E. Reed, 9Q0931
(3) 5 Elenham Log Books—Harold Timmer, 19Q9680
(4) Bartlett Auto Noise Filter—Harold Terry, 15W2292
(5) 5 Crystals from Texas Crystals
W. A. Willis, 5W0391
Ray Lindsay, 13Q0095
Jerry Mackenzie, 19Q0147
Tom Bourret, 12W2006
George Threlkel, 6Q5823

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FIRST PRIZE: Browning Base Station—Sam Folsom, 18Q7644, Chicago, Illinois.

SECOND PRIZE: SMEA Power Mike—Robert D. Jones, 20Q1672, Uniontown, Pennsylvania.

THIRD PRIZE: Cush Craft CG-11 Ground Plane—Frank Traynor, 4W-2240, Annapolis, Maryland.

FOURTH PRIZE: Vanguard RF preamplifier—Jack P. Parkinson, 19Q2663, Springfield, Ohio.

FIFTH PRIZE: Turner 350C Mike—Hayden Beardslee, Inc., KHG1637, Cassopolis, Michigan.

SIXTH PRIZE: 5 Crystals from Texas Crystals—five winners.
Gale Taylor, 17Q1045
H. Garvin, 19Q0357
James F. McDonald, 12W2080
Thomas E. Knox, Jr., 17Q4017
J. A. Belmar, KHG2219

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- Oscillators
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- Transistor Subassemblies
- Power Supplies
- Citizens Band Transceivers
- Citizens Band Antennas / Accessories

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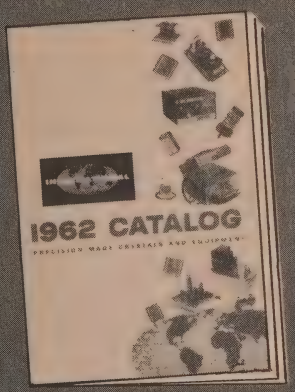

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(If at newsstand-specify dealer)

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Other .....

CB Horizons Annual Interest Survey-Return Today!

CBH RAFFLE REPORT

Our Raffle department has been negligent of late in reporting to our readers who the lucky CB'ers have been in the past three Giveaways.

So here we go. First we go back to February winners.

FIRST PRIZE: *CB Dream Station #1 (Polycomm II-G, Elenco Power Gainer, Antenna Specialists Magnum-27, Lafayette Phone Patch)*—Tommy J. Carson (CB call pending), Little Rock, Ark.

SECOND PRIZE: *Turner 350C mike*—Ron Brewer, 19Q5360, Hamilton, Ohio.

THIRD PRIZE: #1: *Antenna Specialists M-74 antenna*—Roy Steele, 15W 0572, Arvada, Colo.

THIRD PRIZE #2: *Vanguard RF Amplifier*—John P. Arata, 1Q4565, Winthrop, Me.

THIRD PRIZE #3: *Holstrom SK-3 Preselector*—Stanley Colligan, 16Q24-21, Wild Rose, Wisc.

FOURTH PRIZE #1: *OZCO "Snoozer"* squelch—H. Wanczyk, 1W9997, Glastonbury, Conn.

FOURTH PRIZE #2: 100 *CBL cards*—Bert Quillen, 14W1003, Kennewick, Wash.

FOURTH PRIZES #3: 5 CB *log books from Elanem Co.*

1. Joe G. Moseley, 18QA1658, La Center, Ky.
2. Earl C. Manier, 18Q8610, Ft. Wayne, Ind.
3. David F. Orr, 6Q4257, Birmingham, Ala.
4. Charles F. Byrum, 7W3356, Boynton Beach, Fla.
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Other .....

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(TEAR THIS CARD OUT AND PLACE IT ON YOUR MOBILE UNIT'S SUN VISOR)

POPULAR CB 10-CODES

10-1	Receiving poorly
10-2	Receiving well
10-3	Stop transmitting
10-4	OK
10-7	Out of service
10-8	In service
10-9	Repeat
10-10	Standing by
10-13	Advise road/weather conditions
10-20	What is your location?
10-33	Emergency traffic
10-36	Correct time
10-41	Switch to Channel
10-99	Cannot copy you

COURTESY OF INTERNATIONAL CRYSTAL MFG. CO.

PLACE STAMP HERE

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Oklahoma City, Okla.

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CB HORIZONS EDITORIAL DEPARTMENT

P.O. Box 1557

Oklahoma City 1, Oklahoma

CB BOW TIE—(Continued from Page 29)

Now we are in the final stages of construction. Take a 4 inch length of no. 14 plastic covered wire and form a three turn link wound around the center of the B & W Miniductor coil as photo 2 shows. Bring the leads on each end of the no. 14 wire link out through the back side of the insulator board to a two-terminal tie-strip mounted there. Solder one side to each of the two terminals, in turn soldering the shield on your RG-8/U coax to one side and the center conductor of the RG-8/U to the second side.

In order to maintain the center position of the no. 14 wire link on the Miniductor coil, take a few drops of good grade rubber cement and make your connections secure.

TUNE-UP

Because there will be some variations in every system, a method of tuning for *minimum* SWR (standing wave ratio) is suggested. Two factors will determine the match to your antenna. The position of the link and the number of turns in the link, and, the position of the tap on the Miniductor. It is suggested that prior to coating the antenna with Krylon, an SWR meter which indicates both forward power and reflected power be inserted into the coaxial feedline at the transmitter. First try sliding the tap on the Miniductor coil back towards the insulator. It may be necessary to go all the way to the insulator itself to obtain best SWR. When you get the lowest SWR (reflected power) reading, solder the tap wire into place.

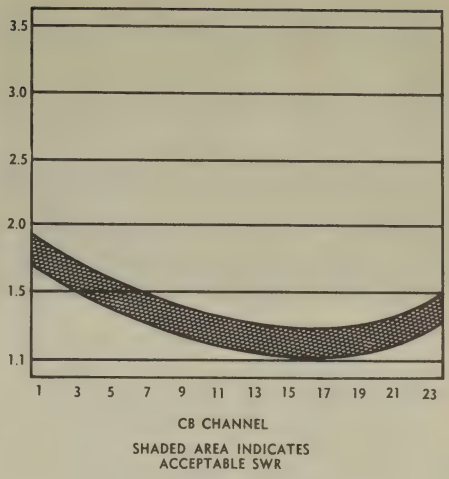

Chart 1

Now try reducing the number of turns in the link to two turns. As a last resort to bring SWR down, increase it to four.

None of this will be necessary if your SWR comes within the acceptance levels shown in chart number 1. This chart was worked up from two "CB Bow-Tie Antennas" constructed at the Horizons lab. These SWR values are read thusly. The standing wave ratio is read vertically in the left hand column. The frequency (CB channels) on which the reading was made is shown along the bottom on the horizontal line.

DON'T MISS AUGUST DIRECTORY ISSUE CB HORIZONS

with 1 pair of crystals, microphone and power cables

$179.50

NOW...Tomorrow and for years to come!

Sonar CITIZENS BAND RADIO

• 8 Channels, crystal controlled transmitter and receiver • Tunable receiver for 22 channels • Transmitter 100% Class B modulated • Adjustable squelch • Automatic noise limiter • R. F. Power indicator • 1 Year guarantee • Easy to install. Ideal for home, boat, car or business. Weighs only 9 lbs... 4¾ x 9½ x 11¼ • FCC Type accepted* (*in preference to only certification).

SONAR RADIO CORPORATION, 3050 W. 21 St. • B'klyn 24, N.Y.
Please send me complete information on Model "E" CB Radio.
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GAR'S GABBINGS

Gar Greene, 1W4844
CBH Roving Reporter

In my travels in the fascinating world of CB, I have run across many inland waterways which are subject to the growing craze of "weekend boating". Nowadays it's not the least bit uncommon to see a boat rolling down the highways firmly attached to a car full of vacationers. We all are familiar with the Ship-to-Shore radio used on the ocean which has become a necessity for salt-water yachtsmen. But this has been found to be an expensive proposition for the small boat enthusiast. The answer? You guessed it! CB!!

The Loret Boating Club, Inc., for example, is a very active outfit based at beautiful Chickamauga Lake in Harrison, Tennessee. Approximately 100% of the membership use CB for their activities, and most of all, for *safety* purposes. Many boating and water ski clubs use CB for co-ordinating boat parades, water shows, and most effectively, in water ski relay races. In my home state of New Hampshire, the N. H. Dept. of Safety endorses and recommends the use of channel 13 for a marine monitoring and emergency channel on our many inland lakes. This is obviously an application of CB which could save lives, property, and valuable time in case of an emergency.

I'd like to leave the water and return to "terra firma" right about now. In the Boston (Mass.) area there is an organization forming under the title of the "New England CB Council" which will represent the entire six-state area with the purpose of promoting and protecting CB in New England. This group will be comprised of officers from all N.E. clubs wishing to participate.

I recently attended two club meetings in the Greater Boston area. The first being the *Cape Cod Bay Citizen Band Club* which is made up of about 60 active members. The club publishes its own paper each month, which, incidentally, is one of the finest club papers I've seen to date. The meeting I attended had a great number of guests and CB'ers from other areas and other clubs.

Another club I would like to mention is *The Greater Boston 11-Meter Association* of Newton, Mass. Headed by Chairman Gordon Wilk, 1W8814, this newly-formed club is growing by leaps and bounds. Incidentally, while I'm discussing the Eastern part of the country, the *Pioneer Valley Five Watters* had a very successful field day on May 27th in Springfield, Mass., and the *Monadonock CB Club* of Mass. and N.H. had a fun-filled Dinner Dance recently with well over 200 people in attendance. More news! CB'ers can look forward to an exciting day on June 17th at the "Second Giant Eyeball QSO" in Norwalk, Conn. I attended the first one and was greatly impressed with the interest and attendance.

TRANSMITTER BOOST!
RECEIVER BOOST!

The ELENCO POWER GAINER Audio Compression Amplifier provides more Talk Power for your CB Transmitter. It also gives you 20 db Audio Gain in the Receiver! Performs as a Volume Compression Amplifier for the CB Receiver . . . ALL IN ONE UNIT! Only 3 connections to rig; pre-wired quick disconnect plug and socket supplied.

PG-1 for 110 Volt Operation
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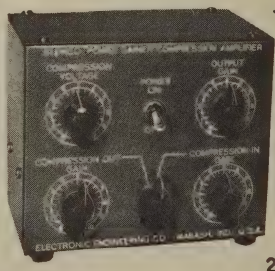
All Models ONLY $45.00

Order Direct from Factory or See Your Local CB Dealer.



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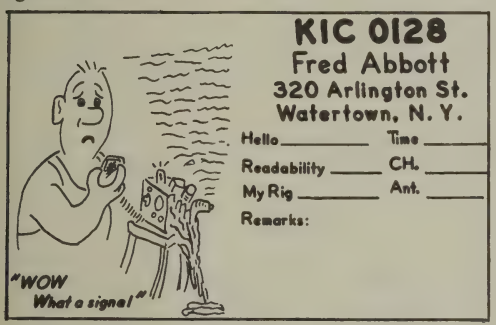
CBL
CARD OF THE MONTH

This month's "Best CBL Card" probably hits home with everyone who has ever heard an overpowering signal from a mobile down the street or the guy across town who has just installed a brand new beam.

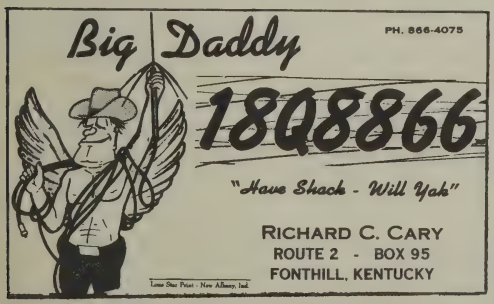
Fred Abbott, KIC0128, Watertown, New York tells the entire story with the clever cartoon shown on his card and the simple caption *'WOW—what a signal!'*



KIC0128's CBL card is a very simple black on white which proves that you don't need a barrage of colors to catch the eye of our CBL Contest Judges.

For his winning card Fred receives a six month extension to his CB Horizons subscription.

The card shown below doesn't win any prizes but we thought we'd show



you the length some guys go to in trying to influence our judges! 18Q8866 picked up the front cover from the CB Horizons CB Call-Book/Directory

(Continued—Page 55)

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Citizen Band Class "D" Crystals

CITIZEN BAND CLASS "D" CRYSTALS
3rd overtone — .005% tolerance — to meet all FCC requirements. Hermetically sealed HC6/U holders. ½" pin spacing. .050 pins. (Add 15¢ per crystal for .093 pins). **$2.95 EACH**

All 22 megacycle frequencies in stock: 26.965, 26.975, 26.985, 27.005, 27.015, 27.025, 27.035, 27.055, 27.065, 27.075, 27.085, 27.105, 27.115, 27.125, 27.135, 27.155, 27.165, 27.175, 27.185, 27.205, 27.215, 27.225.
Matched crystal sets for ALL CB units (Specify equipment make and model numbers) ..... **$5.90** per set

RADIO CONTROL CRYSTALS
in HC6/U HOLDERS—SIX FREQUENCIES
In stock for immediate delivery (frequencies listed in megacycles); tolerance .005%. ½" pin spacing. .050 pin diameter. (.093 pins available, add 15¢ per crystal.) Specify frequency desired.
26.995, 27.045, 27.095, 27.145, 27.195, 27.255..... $2.95 EACH
(add 5¢ per crystal for postage-handling)

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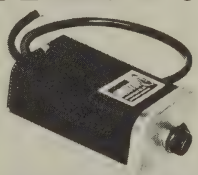
Dept. 7C Phone WE 6-2100

FOR SHIPMENT VIA FIRST CLASS MAIL AT NO EXTRA COST ATTACH THIS ADVT. TO YOUR ORDER!

NEW!



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Thousands in use by CB'ers throughout the country! Prevents receiver jamming from trucks, cars, outboard motors, or other nearby source of pulse-type electrical noise! No need to suppress your car—ideal for base station use. **$16.95 NET**
Completely wired, tested and guaranteed. Installs in 20 minutes.

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HALLICRAFTERS CB-2, 3	R. C. A. MARK VII
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INTL. CRYSTAL 50, 100	VOCALINE ED-27M
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NEED CB QSL CARDS? Fast service, 200 for $5. postpaid. Send 25¢ for samples and 50¢ coupon. McCartney's, Freedom, Indiana.

FREE SAMPLES—CB QSL CARDS $2.50 per 100 in 3 colors. Postpaid. Garth Printing Company, Box 51, Jutland, N. J.

CB QSL CARDS—Call Letter D-Cals, send 25¢ for largest selection of glossy multi-color samples. Handy 10 Code included free. Dick Stauffer, 19QA0625, 1996 NM-18, Gladwin, Michigan

CB-QSL CARDS — BROWNIE-W3CJI/3W1974 3110C Lehigh, Allentown, Pennsylvania. Catalogue with samples, 25¢

CBL-CARDS Rainbo calls, colorful, space age, comic. Samples 25¢ (deductable) C. Fritz, Box 1684, Scottsdale, Arizona

CB WPE QSL CARDS finest quality, multicolor. 10¢ for samples. Radio Press, Box 24A, Pittstown, N. J.

CB QSL CARDS 2 colors glossy 100 for $2.50. Samples, 10¢. Ramsbottom Print Shop, Box 237A, Kirksville, Mo.

CITIZEN BAND QSLS: Religious and regular. Samples 25¢. Sakkers, W8DED PRINT, Holland, Michigan

LAFAYETTE HE-15, HE-15A, Dewald TR-800 plug in crystal receiver converter. No Wiring. No more station hunting. Always tuned to your channel. Switches from tune to crystal receive in three positions. $10.95 with one crystal. Specify channel. F. Abate, P.O. Box 206, Pompton Lakes, N. J.

CALL SIGNS: 3" by 9" for automobile, postpaid $1.00. Display your number. Western Mass. Electronics, P.O. Box 225, Great Barrington, Mass.

CB TIMERS—be courteous, use our five minute sand type timers with plus or minus 15 seconds accuracy. 3½ inches high in red and white trim. 89 cents, cash, check, or money order. Timers, P. O. Box 425, Abilene, Texas.

SIGNAL METER SM-39S—S meter intended for any CB transceiver employing AVC system. Uses one 6C4 tube in Wheatstone Bridge circuit. Only 4 connections required. Illuminated scale. Calibrated S units 1-9 and in db to 30 over. $9.95 postpaid. TP Electronics, 14104 East Lambert Road, Whittier, California

CB'ERS DUAL CONVERSION ADAPTER kit-all parts, schematic, pictorial. Hear only the channel you tune. For HE-15, A; TR-800, 910-etc. $14.95. With Tubes, $16.95. Fore HE-20, A; Mark VII; 770, 1, 2 $15.50. With tubes, $17.50. NOW AVAILABLE for GW-10, $15.75. With tubes $17.75, or $5. deposit plus COD. Bainbridge Radio, 2649 Bainbridge Avenue, New York 58, New York.

CB PHONE PATCH—Have telephone capabilities in your car! Citizens Band phone patches complete with instructions. Wired and Tested, $14.50 plus postage. Weight-4 pds. Send for free catalogue on other items. Gateway Sales Company Dept. H-7, 6150 Delmar Street, St. Louis 12, Missouri

CB CLUB MEMBERS—We sell our CB testing equipment at special discount prices to clubs! Write for details today! H & L Electronics, P.O. Box 125, Medford, Oregon

NUVISTOR PLUG IN! For the utmost sensitivity and lowest noise, replace that noisy pentode RF tube with our Nuvistor Plug-In. $17.95. Give make, model of transceiver and tube number being replaced. Literature available, free. Raytronics, P.O. Box 938, Battle Creek, Michigan

FREE LITERATURE—Ozco "1-10'er" antenna coupler allows the use of any CB mobile antenna for both CB and broadcast radio—even at the same time! Guaranteed unsurpassed! Only $5.95 postpaid. Ozco, Canaan 3, Connecticut

DENVER AREA—International Crystal, Osborne, Sonar and others. Extra powerful Walkie Talkies, and shock mounted units for Jeeps, industry, etc. Mountain Radio, 509 Colorado Building AC 2-0362

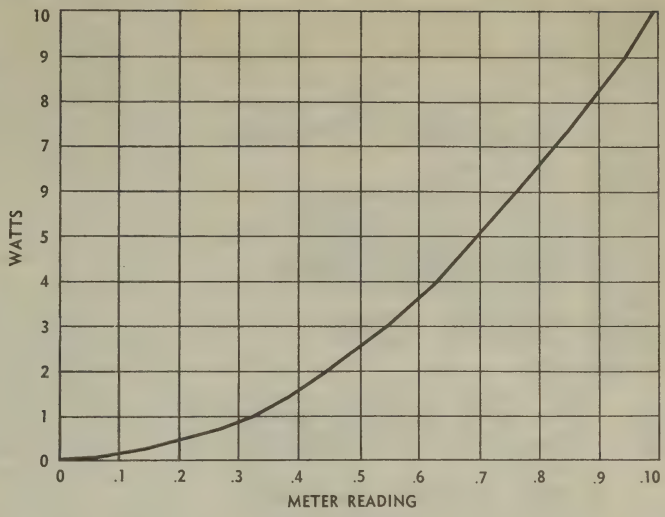
MODULATION BOOSTER—Its new! Its terrific. As much as DOUBLES your transmit and receive range with no violation of FCC power requirements. Compact, easy to install, with instructions. New $14.95. Dealers write: ROKO Products, Inc. Box 3766, Baltimore 17, Maryland

ANTENNA SWITCH—Operate one CB on two antennas or two CBs on one antenna. Attractive stainless steel. Takes PL-259 plugs. Net $7.95. ROKO Products, Inc. Box 3766, Baltimore 17, Maryland.

TONE SIGNALS—new kind, unlike Q-Bird or T-Call. Complete with instructions only $3.95 each. Ideal Enterprises, Box E, Wessington, South Dakota

CB DEALERS-DISTRIBUTORS—Do you handle CB Horizons on your newsstand or counter? How about the monthly CB Call-Book or Annual Call-Book/Handbook? There are no better ways of attracting CB'ers to your display area or shop. Contact P. T. Pogue, Business Manager, CB Horizons, P.O. Box 1557, Oklahoma City 1, Oklahoma today for your handsome set of free attractive window display posters for CB radio.

CB POWER METER—(Cont. From Page 35)



Power Meter calibration curve. To use this chart, locate the meter reading along the bottom scale. Read straight up from this point until you meet the curve. Then read straight to the left; the figure on the vertical scale will be the output power in watts. Normal readings for a transceiver in good condition will range from 1 ½ to 3 ½ watts; lower readings indicate trouble.

the meter. Connect the other meter lead to the case at the same point the diode is connected, and your wiring is finished.

The only thing remaining to complete the unit is to make up a jumper cord from a foot or so of RG/58-A with a coax connector on one end to fit your rig and on the other end to fit the power meter. Be sure, though, that you put the power meter box back together firmly with the sheet-metal screws supplied—otherwise, it can radiate enough power to interfere with other operators within a 2-to 3-block radius.

Normal output power of most current CB rigs is about 3 watts. When modulated with a steady tone, the power should rise to between 5 and 6 watts. If the power falls, or if the increase is less than this, you have modulator problems. If you get less than 2½ watts indicated output, you have an inefficient final. If you get *more* than 4 watts out, you're running illegal power!

PARTS LIST

- **4 220-ohm, 2-watt composition resistors (wire-wound units will not work)**
- **1 23.7 K ohm, ½-watt, 1% tolerance carbon-film resistor (Lafayette radio part no. 3RS-26-23.7K)**
- **1 .001 mf disc ceramic capacitor**
- **1 1N34 crystal diode**
- **1 0-1 MA milliammeter (Lafayette Radio part no. TM-60)**
- **1 chassis box (Lafayette Radio part no. MC-363)**
- **1 Coaxial connector (Lafayette Radio part no. HE-781)**
- **1 3-terminal tie-point strip**
- **2 feet RG/58-A coax cable**
- **2 male coax connectors (see text)**

PARTS SHOW—(Continued from Page 25) (TV picture tube to you) imprinted with a horizontal line, with the CB channel numbers 1-22. Through special circuitry the unit **visually** displays all of the signals on the band! When there is a signal on channel 5, a white blip line shows up above the channel 5 marking on the tube face. And so on right down the dial. You can see exactly which channels are in use at all times by simply taking a quick glance at the Channel Monitor. The Model 881 is ready to plug in, operates from 115 vac, needs **no** connections in the transceiver at all, works with any transceiver or receiver, and merely requires that you hook through it with standard coax connectors just as you work insert a SWR meter in the line. Model 881-M is available for mobile. Flood Mr. T. H. Lanman at TELco with mail about this one!

CBL CARD—(Continued from page 53) monthly supplement, in true-to-life red and black! That's the spirit of two-way communications—*the CB'ers Ozzie*—Richard Cary freely lifted from our art department. Sorry Dick . . . better luck next time!

Ozzie

SPACE RAIDER ANTENNA PRICE

Page 45 of the June CB Horizons carried a ¼ page advertisement from the Space Raider Company, 1076 East Walnut Street, Pasadena, California. Object of the advertisement was a series of Space Raider antennas for CB, including a six element cross polarized beam which gives both horizontal and vertical plane signals. The price of this antenna, model CB-11-PD, was omitted. *It is $85.00.*

BEFORE WE SIGN OFF

D. C. FLASHES!!

By REX HOLMES, 24W2424

Two major changes in the Communications Act—the law which gives the FCC its power over all civilian radio users—have been signed into law.

One of the changes gives the FCC authority to levy "small" fines against certain rule violators; the other ends the necessity for notarization of license application forms. Both were made at FCC request, and were immediately put into effect by the Commission although formal rules changes have not yet been processed.

Since notarization of applications is no longer required, you can just ignore that part of the license form (but be sure to sign it in the space provided anyhow). That's the major effect of this law change.

The "small fines" provision, though, may be of more effect to you—that is, if you don't follow the rules of Part 19.

This change allows the FCC to levy fines of from $100 to $500 for "willful or repeated" violation of its regulations in 12 specific cases.

The conditions under which such fines may be imposed are:

(1) Operation without a proper license;

(2) Failure to identify a station "at the time and in the manner" set forth in FCC rules;

(3) Transmission of a false call sign;

(4) Use of an unauthorized frequency;

(5) Improper communications on a distress or calling frequency (not applicable to CB);

(6) Interference with a distress call;

(7) Failure to attenuate spurious emissions (harmonics) to the extent required;

(8) Operation with too much power;

(9) Unauthorized communications;

(10) Unauthorized type of emission (use of FM or CW on CB would fall into this group);

(11) Unauthorized type of equipment (homebrew transmitters without crystal control would fit here); and

(12) Failure to respond to official Commission communications.

And just in case anyone should feel that it's worth $500 to break the rules, the new law specifically provides that these fines may be levied *in addition* to any other penalty provided by law.

To make the fines stick, the FCC must cite an offender within 90 days of the alleged offense, and must prove that the violation was either willful or repeated.

Most of the key violations apply only to the licensee of the station involved, but those dealing with station identification, and with distress and calling frequencies, apply *also* to the person operating the station.

TROUBLE SHOOTING (Continued from Page 47)

Corrective maintenance—fixing it up after it goes dead—is another thing entirely. Space doesn't permit a full description this month—and an abbreviated description would be more confusing than none at all. So the detailed techniques of corrective maintenance will be described completely in our next issue, with "yes-or-no" charts pointing the way to the most likely causes of any troubles that might show up. In the meantime, remember this old army slogan: "Preventive maintenance means *fine* performance!"

— jk —

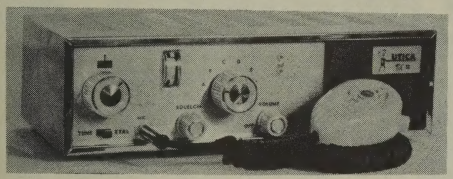
HOW MUCH FOR "NO HOLES"?

Good Question! In May in the ad for McCullough-Aero Corporation's new "GUT-R-MOUNT" we gave the correct price of $9.95 and then accidentally listed an incorrect price in the coupon. We goofed! $9.95 is the correct price of this new collapsible antenna mount . . . which attaches at car roof level—with **No Holes in Your Car Top!**

TRADE IN YOUR OLD RIG NOW!

During Tommy's Trade-In Bonanza

Get the NEW Utica TC II



Or Johnson Viking, ECI Courier, Kaar, Tel-Rad or other fine set.

20% BONUS TRADE-IN ALLOWANCE

Send in the coupon below **before July 15th** and Tommy Hoshall will give you **20% above the actual market value** of your old set . . . in trade on the new CB rig of your choice!

YOU JUST CAN'T BEAT THIS FABULOUS DEAL!

When CITIZEN BAND TWO-WAY RADIO CO. receives your coupon—stating the make and condition of your present set, and the model you'd like to "trade-up" to—Tommy will immediately send you his special trade-in offer on your set. It's really easy to take advantage of this special offer. You simply ship us your old beat-up rig, with your check or money order for the balance . . . presto! **You're on the air with a brand new transceiver!**

Don't delay. Clip the coupon and mail it today. You'll be amazed at the high trade-in allowance Tommy will offer you (a big 20% bonus) on that old moth-eaten rig of yours!!

FREE BROCHURE
Lists complete line of CB Equipment and Accessories

Dealers: Write for special policies & prices

Citizen Band Two-Way Radio Co.
4007 N. Pennsylvania — Oklahoma City, Okla.

Tommy, I have a_____and would like to trade it in on a NEW_____
_____Condition of my old rig:
☐ Good ☐ Still works ☐ Not so good
Name_____
Address_____
City & State_____

Now Available!

Smea POW-R-MIKE

Model "M" *Now Only* $39.95

- FOR USE WITH CB TRANSCEIVERS
- SELF-CONTAINED 110 V. POWER SUPPLY
- SELF-CONTAINED CERAMIC MICROPHONE
- INCREASES TALK POWER WITH NO INCREASE IN CARRIER STRENGTH
- INDIVIDUALLY TESTED—GUARANTEED
- MOBILE MODEL AVAILABLE SOON!

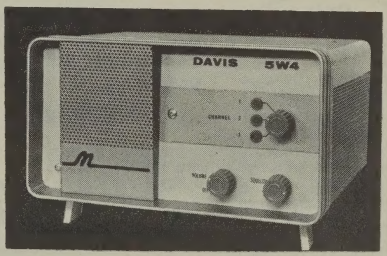
See your local CB Dealer or Write Direct to:

Smea Engineering

TIPTON, INDIANA

Here it is! The NEW

DAVIS 5W4



4 Watts Out!

Precision Engineered to give you 4 watts. 100 MW switch on back panel for use under Part 15 until CB license is received.

Input: 5 *watts*—*Output*: 4 *watts*—*Selectivity*: 45 *db down* 10 *kc*—*Sensitivity*: .5 *mv at* 6 *db signal to noise*—*Squelch*: *Opens at* .5 *mv, noise balanced will not open on noise* With 1 set of Xtals..... **$199.50**

Dealer Inquiries Solicited

DAVIS *Manufacturing Co.*

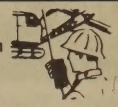
2072 LA JOLLA DR.—STOCKTON, CALIF.—HO 5-1718

LAFAYETTE is America's Citizens Band Headquarters

HE-29B

Ship to Shore

On the Farm

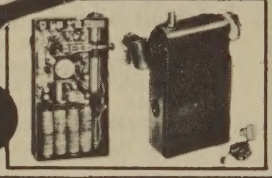


Construction Work

NO LICENSES, TESTS OR AGE LIMITS

LAFAYETTE 10-TRANSISTOR PORTABLE CITIZENS BAND "WALKIE TALKIE" T.M.

39.95
2 for 78.88
NO MONEY DOWN



PORTABLE—POCKET SIZE Only 6⅜x3¼x1⅝"

- **Completely Wired—Ready to Operate**
- **Fully Transistorized—10 Transistors plus 1 Diode**
- **Uses Inexpensive Penlight Batteries**
- **No License, Tests or Age Limits**
- **Comes with Leather Carrying Case, Earphone, Antenna, Batteries and Crystals**

As simple and easy to use as the telephone—and twice as handy. Receives and transmits up to 2 miles under average conditions. Weighs only 18-oz. and slips into your pocket. Push-to-talk button operates built-in speaker as sensitive microphone.

New! LAFAYETTE HE-15B CITIZENS BAND TRANSCEIVER

MADE IN U.S.A.

Only 59.50 No Money Down

Superheterodyne receiver now with 8 crystal controlled transmitting positions.

- **Effective Full-wave variable noise limiter**
- **Front panel RF jack**
- **Ceramic temperature free microphone**
- **Improved selectivity and power output**
- **Complete with Transmitting crystal for channel 9**

New! LAFAYETTE HE-20C CITIZENS BAND TRANSCEIVER

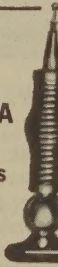
MADE IN U.S.A.

Now With 8 Crystal Controlled Transmit Positions and 8 Crystal Controlled Receive Positions

Only 109.50 No Money Down

- **14 Tube performance**
- **Tuneable over all 23 channels**
- **Adjustable Squelch**
- **Effective series gate noise limiter**
- **Built-in power supply for 110V AC or 12V DC.**
- **Complete with matched Crystals for channel 9**

LAFAYETTE ALL-IN-ONE CITIZENS BAND MOBILE ANTENNA



The Scoop Buy for Citizens Band Mobiles

6.95

HE-800WX

- **Chrome Swivel Base**
- **Stainless Steel Spring**
- **102½" Stainless Steel Whip for Optimum 11-Meter Performance**

Chrome swivel ball mount base designed for mounting on any surface. Stainless steel spring holds rod in property adjusted position.

LAFAYETTE TRANSISTORIZED FIELD STRENGTH METER TM-16A

- **Permits Easy Tune-Up For Maximum Transmitter Output**
- **Earphone Jack To Monitor Audio**
- **Tuned Input 2.53 to 57 MC**

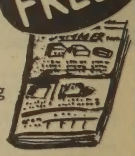
15.95

Ideal for use with Ham, Citizens Band or other transmitters within its frequency range. Tunes Transmitter and antenna to maximum RF output. Big 200 μA meter. Powered by 1.5 V battery.

LAFAYETTE RADIO

SEND FOR LAFAYETTE'S NEW SUMMER CATALOG

FREE!



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DEPT. CBG-2 P.O. BOX 10
SYOSSET, L. I., N. Y.

☐ Send Free Summer Catalog Supplement featuring the full line of Lafayette C. B. Equipment.

$_____ enclosed for Stock No. _____

Name _____

Address _____

City _____ Zone _____ State _____

HERE'S THE NEW, 2-WAY HAND-HELD TRANSCEIVER THAT OUTPERFORMS 'EM ALL!

PERSONAL *Messenger*

• No license required—may be used at once! • Meets FCC requirements for use with licensed Citizens' Band stations, too!

This is the new "Personal Messenger"—a superbly engineered 2-way crystal-controlled transceiver so compact it fits in your hand—so flexible it can be used in thousands of applications! 11 transistors and 4 diodes—superheterodyne receiver with exclusive tuned R.F. amplifier gives you twice the sensitivity and *more than 40% more range than units with conventional circuitry! Powerful two-stage transmitter delivers more power output than similar units with the same rated input!* Unmatched audio intelligibility and razor-sharp voice reproduction—automatic noise limiter—automatic volume control—positive squelch control—elastic hand strap—operates on penlight or rechargeable nickel-cadmium batteries.

$109.50

ILLUSTRATED AT LEFT—The Viking "Messenger"—maximum legal power Citizens' Band crystal-controlled transceiver. Excellent receiver sensitivity and selectivity—highly efficient transmitter punches your signal home! Built-in squelch—AVC—ANL. With tubes, push-to-talk microphone and crystals for 1 channel.

FROM $134.95

Delivery or fleet operation

Your own personal use

Construction or Business

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WRITE TODAY

E. F. JOHNSON COMPANY

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• Please rush me your full color brochure.

NAME_____

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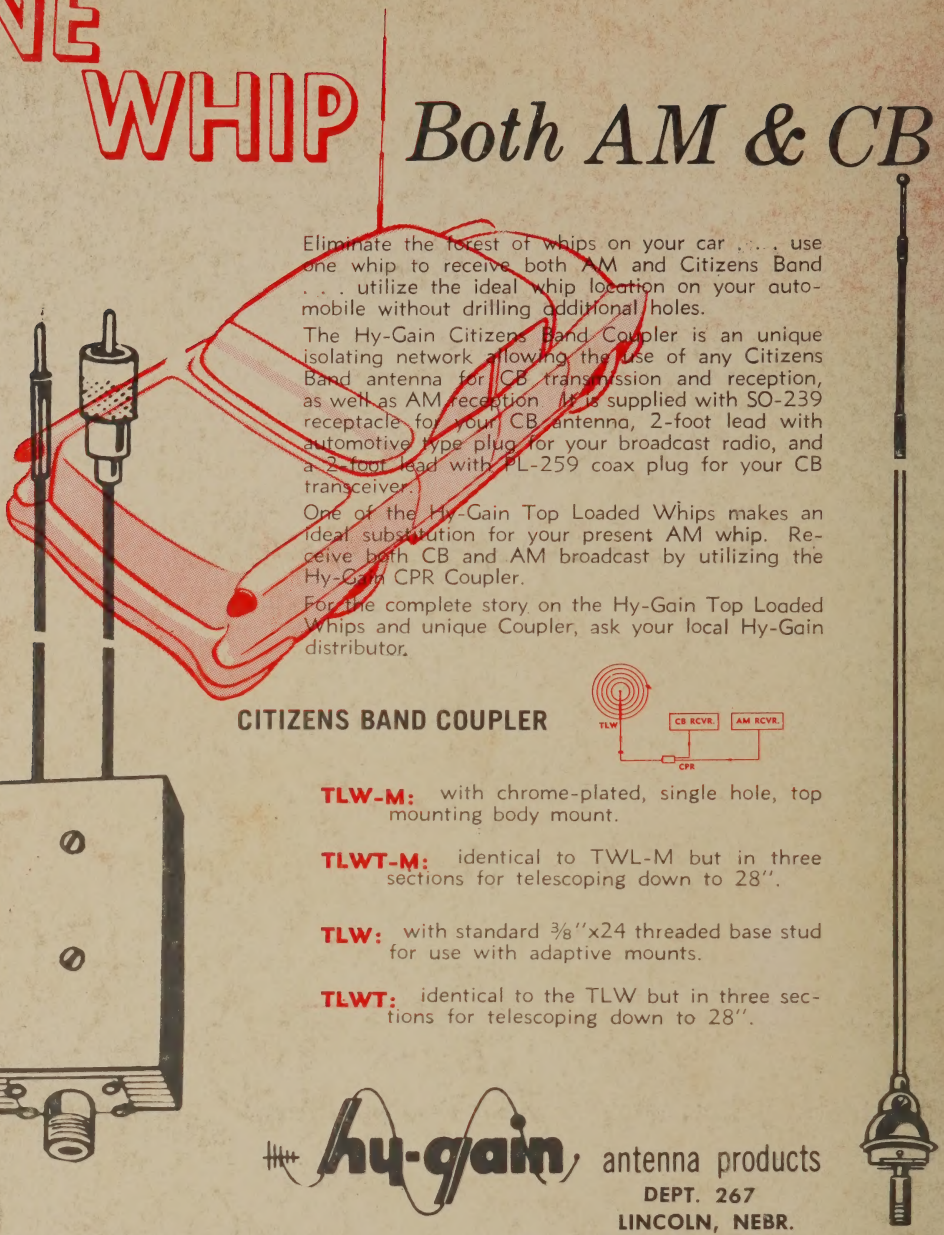
Manufacturers of the world's most widely used personal communications transmitters

ONE WHIP *Both AM & CB*



Eliminate the forest of whips on your car . . . use one whip to receive both AM and Citizens Band . . . utilize the ideal whip location on your automobile without drilling additional holes.

The Hy-Gain Citizens Band Coupler is an unique isolating network allowing the use of any Citizens Band antenna for CB transmission and reception, as well as AM reception. It is supplied with SO-239 receptacle for your CB antenna, 2-foot lead with automotive type plug for your broadcast radio, and a 2-foot lead with PL-259 coax plug for your CB transceiver.

One of the Hy-Gain Top Loaded Whips makes an ideal substitution for your present AM whip. Receive both CB and AM broadcast by utilizing the Hy-Gain CPR Coupler.

For the complete story on the Hy-Gain Top Loaded Whips and unique Coupler, ask your local Hy-Gain distributor.

CITIZENS BAND COUPLER

TLW-M: with chrome-plated, single hole, top mounting body mount.

TLWT-M: identical to TWL-M but in three sections for telescoping down to 28".

TLW: with standard 3/8"x24 threaded base stud for use with adaptive mounts.

TLWT: identical to the TLW but in three sections for telescoping down to 28".

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